Issue 212

P.S

1970 Series
July

THE PREVENTIVE MAINTENANCE MONTHLY

OPTIC CARE
Pages 37–47

E-1 . . . THRU O-10 . . .

PM

Your outfit's ability to survive a fight depends a lot on Preventive Maintenance. PM is done by people . . . meaning you, and you and you, no matter if you wear 1 stripe or 4 stars.

It's that simple. And that's how AR 750-5 says it. . . PM is the responsibility of everybody in the Army . . . from top commanders all the way down to squad and section leaders.

Either you physically do PM, or you physically see that it gets done. Supervision plays as big a part as wielding a wrench or grease gun. To do the job right, you've got to get with the equipment, with the operators and with the mechanics to give leadership and direction and to see the PM is not hidden by spit-and-polish.

So, regardless of your rank, slot or MOS, PM is part—a big part—of your job. Good PM is vital to equipment readiness and combat effectiveness. That's why . . .

Specialists . . .
Sergeants . . .
Warrants . . .

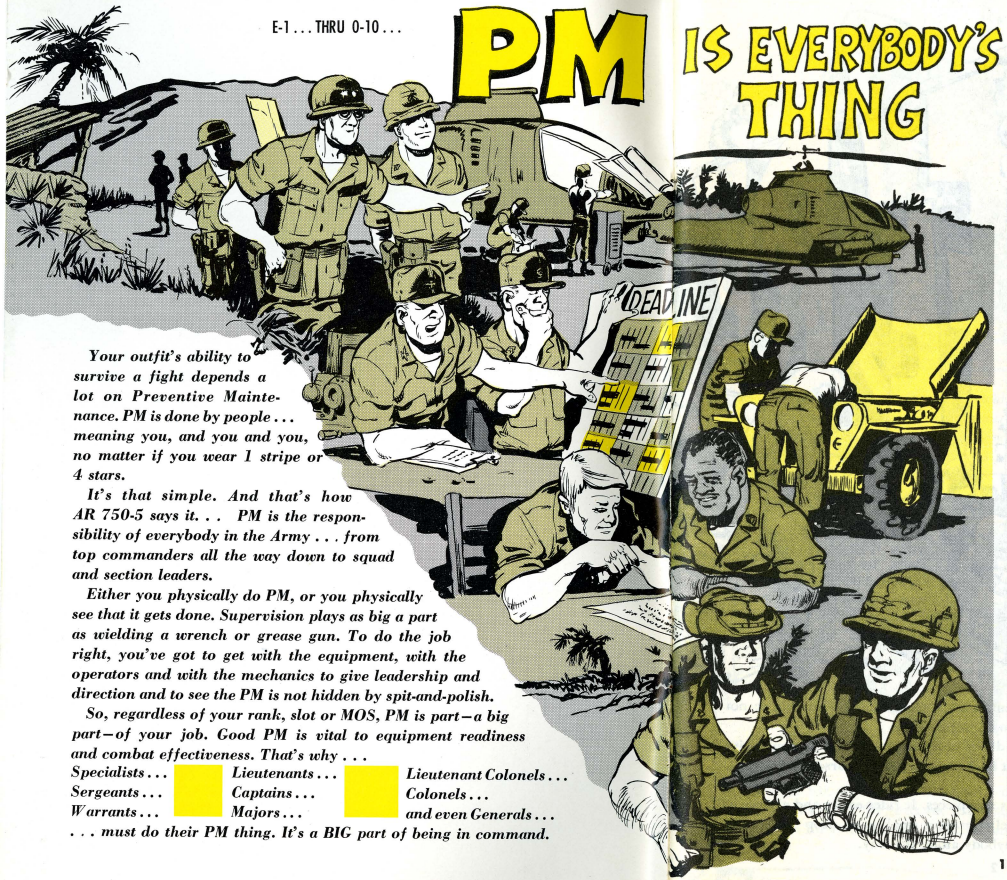
Lieutenants . . .
Captains . . .
Majors . . .

Lieutenant Colonels . . .
Colonels . . .
and even Generals . . .

. . . must do their PM thing. It's a BIG part of being in command.

E-1 . . . THRU O-10 . . .

PM IS EVERYBODY'S THING



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Use of funds for printing of this publication has been approved by Headquarters, Department of the Army, 26 February 1968.

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PS wants your ideas and contributions, and is glad to answer your questions. Name and address are kept in confidence. Just write to:

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PS Magazine,
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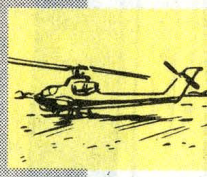

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Most equipment, parts and components can return to action—if they're not jolted or rusted into junk on the way to the repair shop.

Every item going to support or to depot needs as much care as you'd give a new item—**maybe more.** To send it back unprotected is **worse** than useless. It wastes the cost of the return trip!

It's best not to return the item in bits and pieces. It rides easier and arrives in better shape if it's assembled. This helps prevent small-parts drop outs—and discourages cannibalizing capers by anybody along the way.

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Always use a preservative if one's called for. That means grease or oil for gears and use of sealed waterproof containers for electronics or optical items.

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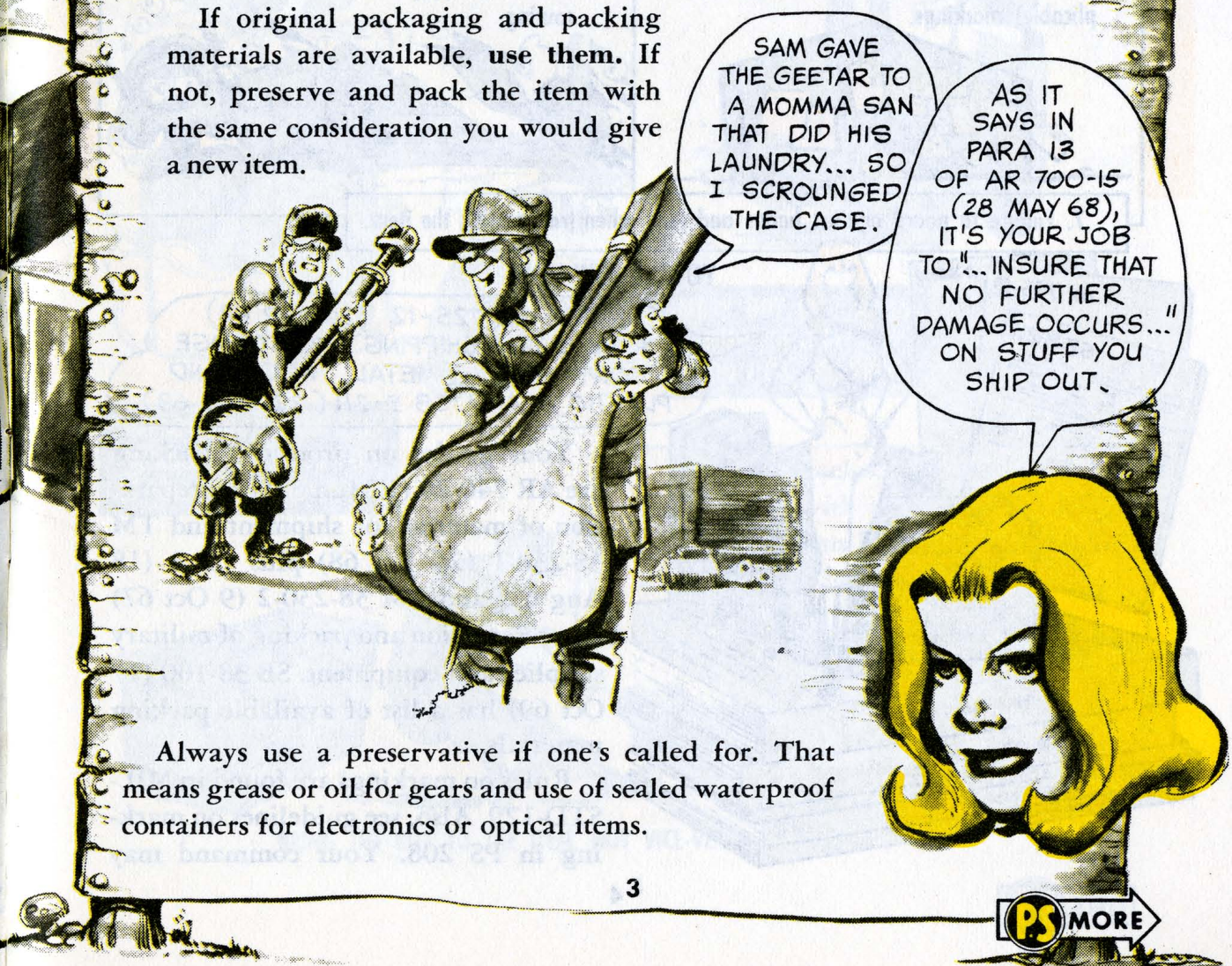

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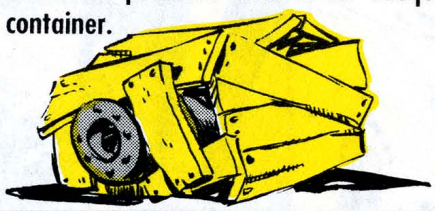
PS MORE

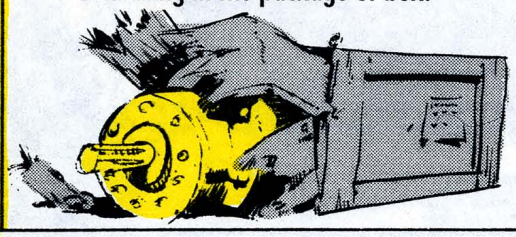
And most of the "further damage" to parts, components and end items returned to support units or depots or to CONUS results from one or more of these failures:

1. Failure to use preservatives on the item.

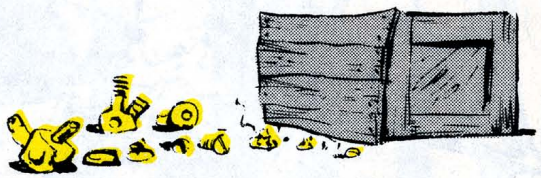
2. Failure to pack the item in an adequate container.



3. Failure to use enough cushioning, blocking or bracing in the package or box.

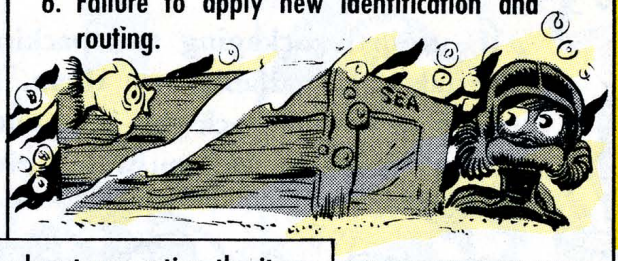


4. Failure to wrap or pack each item separately.

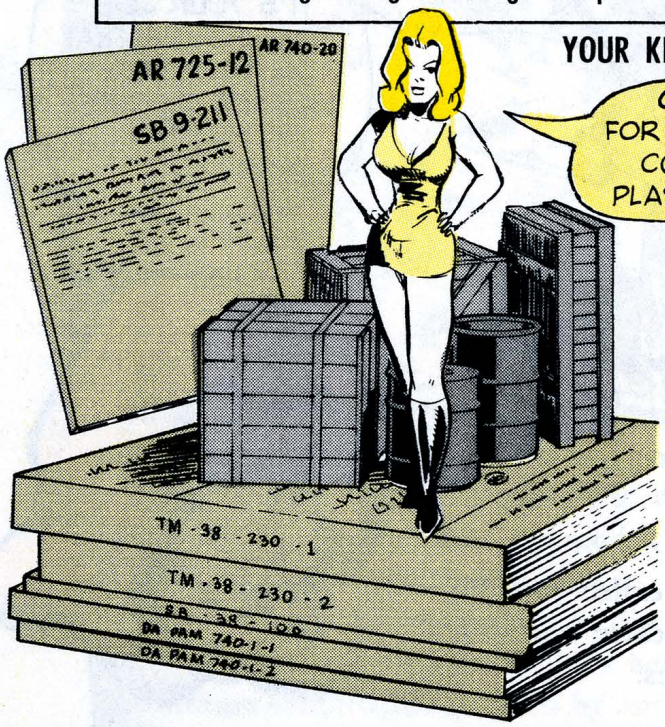


5. Failure to remove old (and no longer applicable) markings.

6. Failure to apply new identification and routing.



7. Failure to guard against bangs and jolts when transporting the item.



YOUR KNOW-HOW

CHECK AR 725-12 (26 APR 68) FOR REUSABLE SHIPPING AND STORAGE CONTAINERS...(METAL, WOOD, AND PLASTIC) AND SB 9-211 (22 MAY 69).

Your guides on protective packing are AR 740-20 (17 Jun 65) on preparation of material for shipment and TM 38-230-1 (24 Jan 68) plus Ch 1 (18 Aug 69) and TM 38-230-2 (9 Oct 67) on preservation and packing of military supplies and equipment. SB 38-100 (17 Oct 69) has a list of available packing materials.

Rules on markings are found in MIL-STD-129. Also, see guidelines on marking in PS 208. Your command may

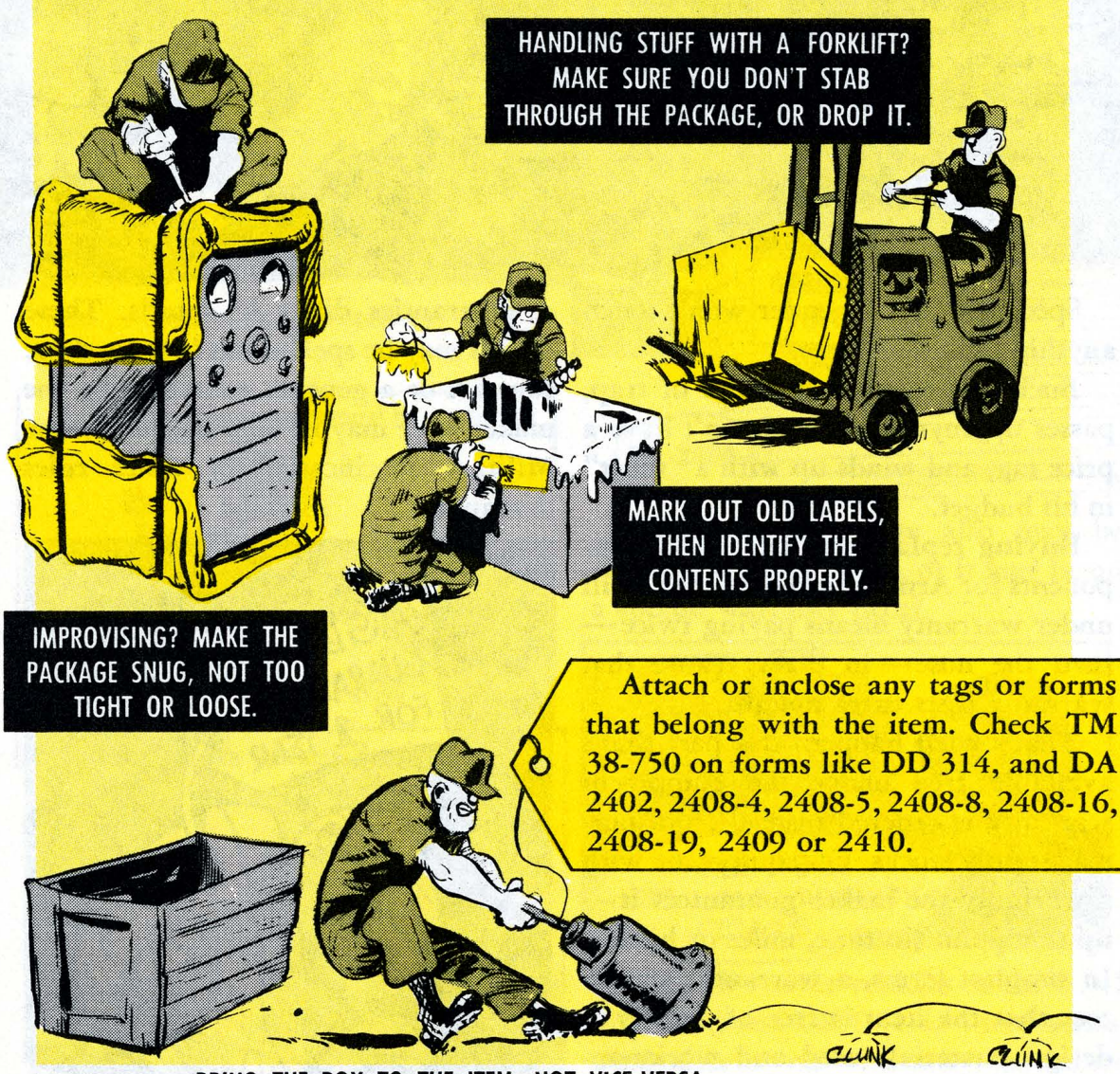
have issued a local SOP on this, too.

But you can avoid a lot of damage without laying an eye on a rule book.

F'rinstance, when a replacement part comes in a package, that same package can help guarantee a safe return trip for the part you remove. It can, that is, if you save the package and protective inserts and use 'em to protect the "wounded" item just as they did the new one.

And you don't need to be foxy as a fox to know that you never toss repairable items in a grab-bag box. Pack each item separately, each in its own container, to avoid bang-up.

Before you pack equipment and components for return to support or depot, make sure they're cleaned as spelled out in the TM 750-series on retrograde actions — starting with TM 750-210 (24 Jul 69). See the index, DA Pam 310-4, for a complete list. You'll find one listed there for your particular equipment.



BRING THE BOX TO THE ITEM, NOT VICE-VERSA

PS END

Specialist Buck Spender won't touch anything marked "free."

Buck figures it's some kind of trap, passes up anything that doesn't have a price tag, and winds up with a "short" in his budget.

Buying replacement parts and components for Army equipment that's still under warranty means paying twice—thru the nose—in taxes, 'cause that warranty costs extra dough!

That's what happens if a part that's available free under the equipment warranty is ordered instead from normal supply stocks. On equipment with a warranty the maker guarantees it—up to a point (in time, miles or hours). In simplest terms, a warranty guarantees that the item is free of defects in design, materials used and workmanship.

Warranties differ in details. These details may be spelled out in a purchase contract or a general guarantee by the maker—or may be only implied in the Military specification or other rules that apply.

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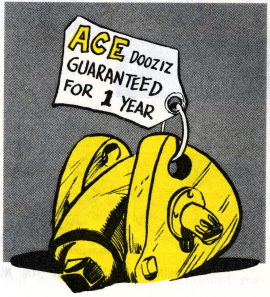

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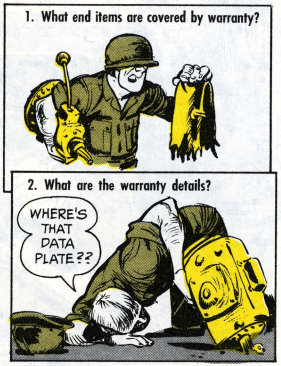
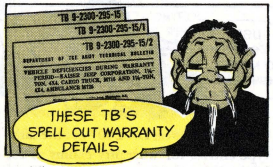


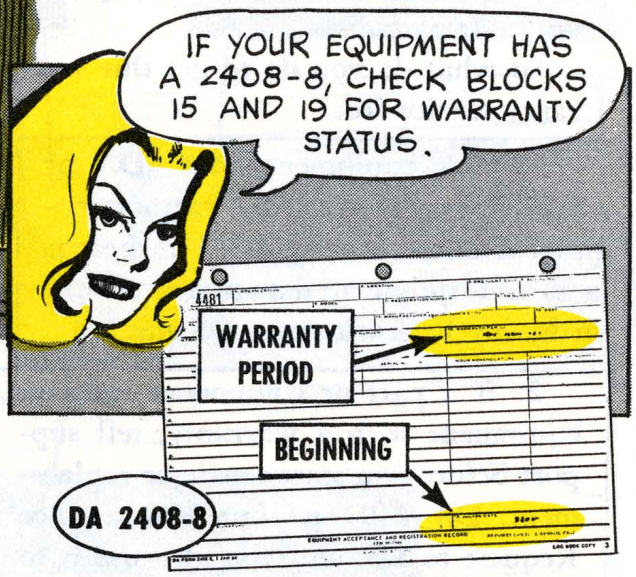
The acceptance date also may be stamped on data plates, or it may be on a special warranty decal.



The TB's cover vehicles of the G741 (3/4-ton) and G890 (1-1/4-ton) series. And details on warranty procedure are in TB 9-2300-295-15 (Jun 67).

PS MORE

3. How do you get action on repairs and replacements for items covered by warranty?



So . . . warranty watchers face 3 questions:

1. What end items are covered by warranty?

2. What are the warranty details?

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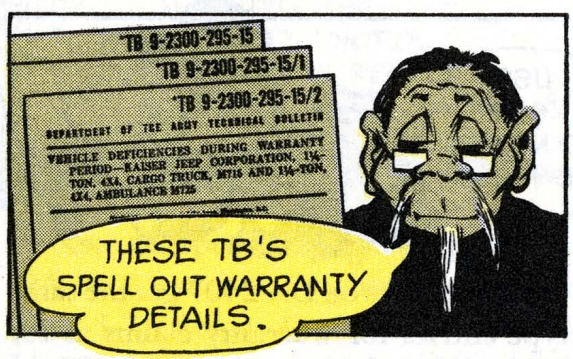

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P.S MORE

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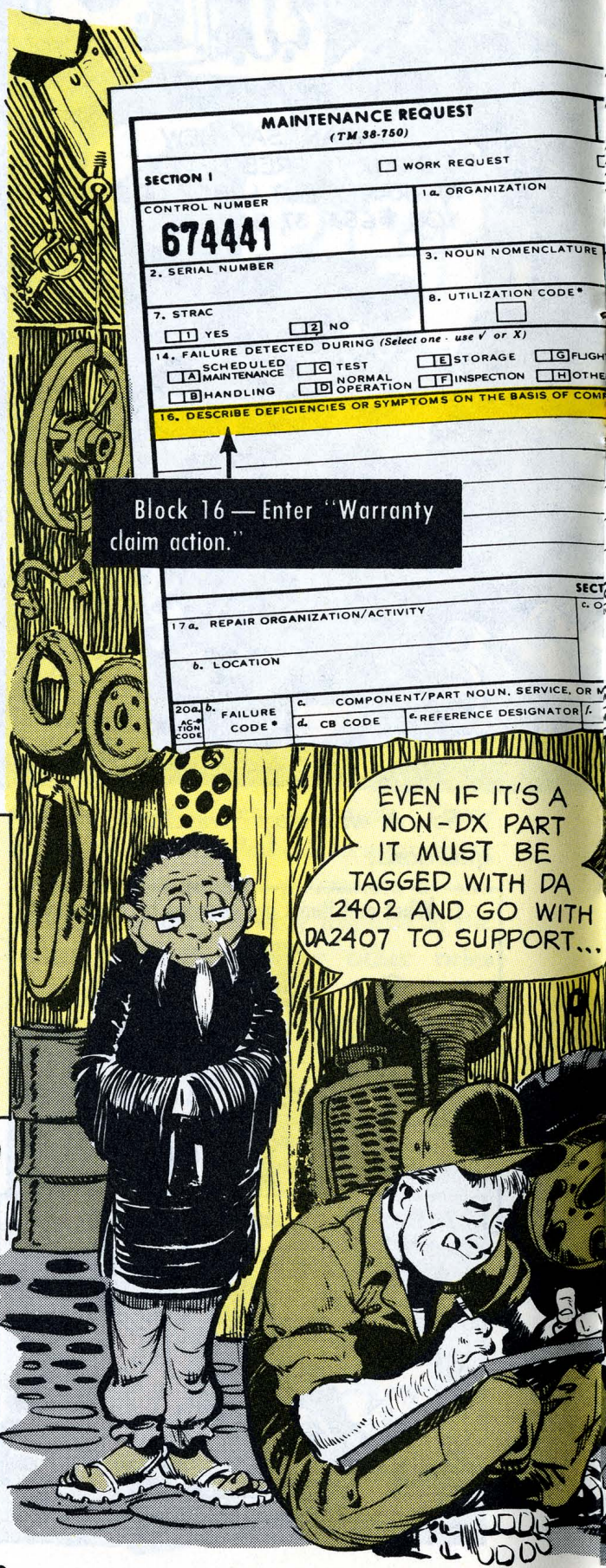
Some off-the-shelf commercial items used by the Army are covered by commercial-type warranties (usually for about a year) that may not be spelled out in Army pubs.

So what do you do to get this warranty service free?

1. Check equipment pubs (DA or manufacturer's) to see if a warranty applies. Also check DA 2408-8 (if there is one) and equipment data plates. (If still in doubt, check with your DS unit.)

2. If a part or component fails on equipment with a warranty, tell support before you start repair or replacement. DA 2407 is your Maintenance Request to DS, and you also use it to make all claims on equipment under warranty as spelled out in para 3-7.4.2 of TM 38-750.

Most blocks on DA 2407 get the same type entries for warranty claims as for other maintenance requests. But here are some special warranty-claims rules for entries by unit filing the claim and/or unit making repair:



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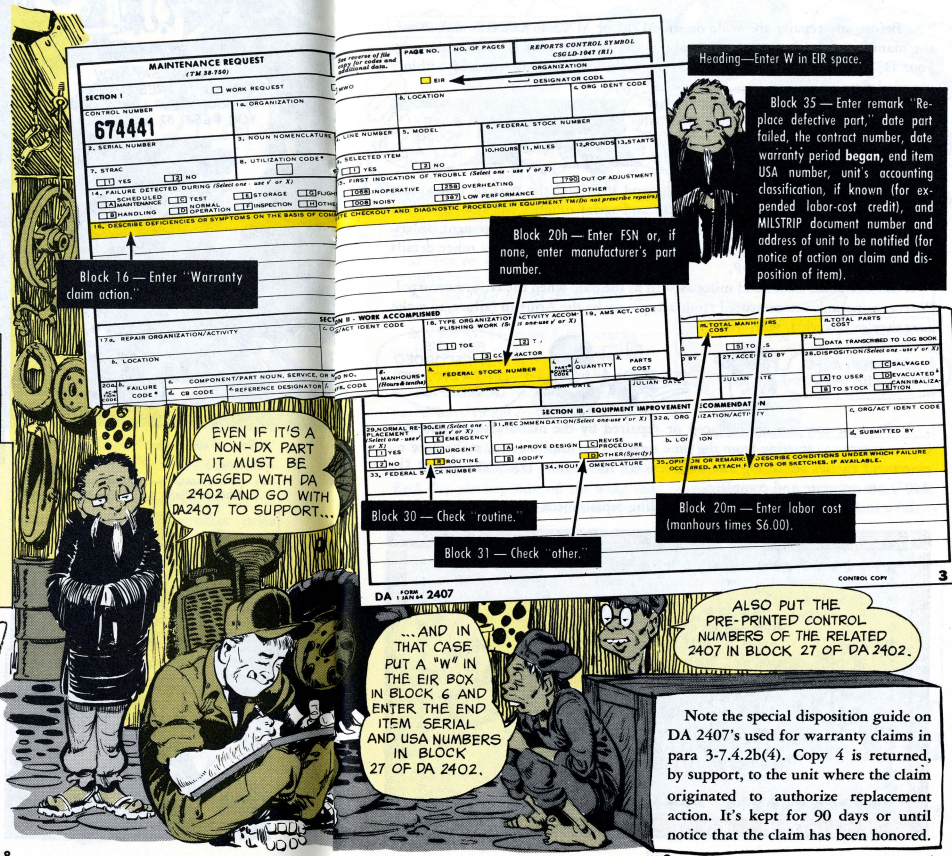
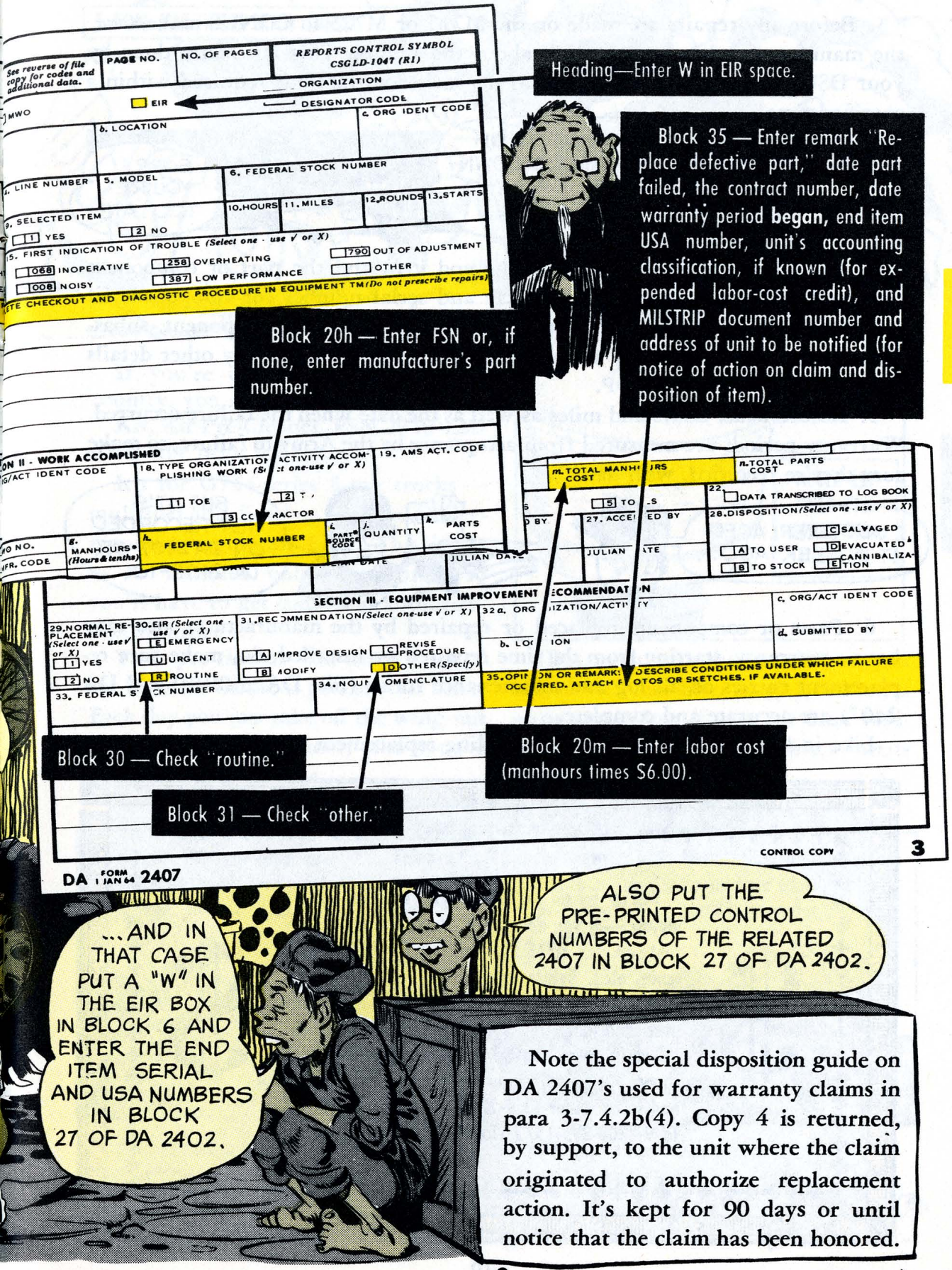


Note the special disposition guide on DA 2407's used for warranty claims in para 3-7.4.2b(4). Copy 4 is returned, by support, to the unit where the claim originated to authorize replacement action. It's kept for 90 days or until notice that the claim has been honored.

PS MORE



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PS MORE

3. Before any repairs are made on the M715 or M725 in CONUS make sure the manufacturer has been notified about the failure. This is usually done by your DSU under local SOP. Notice to the maker normally is required within a specified time.

4. Note that you need to identify the end item and the part or component that failed. Use USA number for vehicle and serial number for component (if they have 'em). (Sometimes you may need to identify part, component, subassembly and major assembly to pin-point the defect.) Include any other details called for by your local SOP.

5. Record exact hours and miles as well as the date when the failure occurred. Warranty periods are measured from acceptance by the Army to failure, so make sure they're recorded, with dates.

6. Parts or components replaced or repaired by the manufacturer also may have a warranty, starting from the time repaired or installed. So, make sure replacement entries on all log and maintenance forms (like DA 2408-10 and DA 2407) are accurate and complete.

Like in life, the best are free — including replacement parts and components.

You're missin' a bet — and wasting Uncle's money — if you don't take advantage of the warranty on your M715 1¼-ton truck (or M725 ambulance, etc.). Before you do any repair work on your 5-quarter, check to see if it qualifies for free parts and labor. If it's under 2 years old and has rolled up less than 6,000 miles, there's a good chance the manufacturer will make good for parts and labor under TB 9-2300-295-15 (Jun 67) and TB 9-2300-295-15/2 (Jan 68).

5-TON MULTIFUEL AND DIESEL . . .

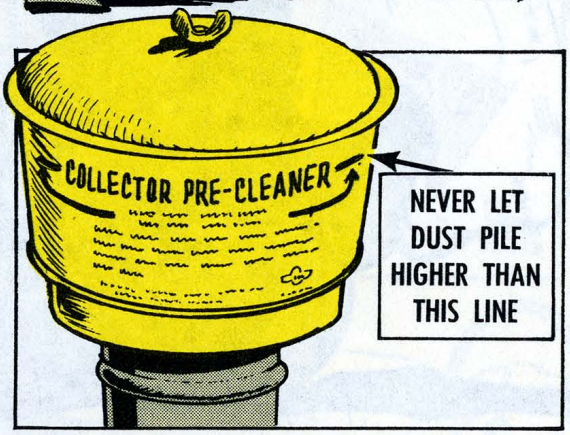
DUST GRABBER

If you're operating in real dusty country, you may need:

Kit, Air Pre-Cleaner, FSN 2940-121-6169 (the price is $15).

It's for G744-series 5-ton trucks — multifuel and diesel — with the fender-mounted engine air filter. This kit is to be installed only as-required, so you'll have to get command authorization to order it.

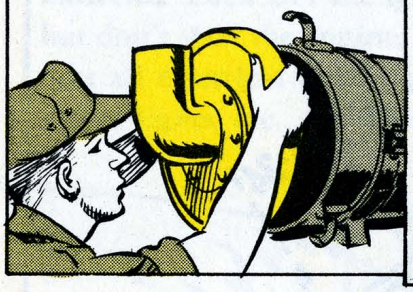
Your pre-cleaner will catch a lot of the big stuff before it gets to your filter. Each day you just take off the wing-nut on top of the pre-cleaner, take out the cup and dump the dust.



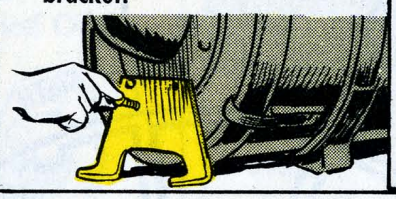
(But, even with the pre-cleaner, you still service your filter every 1,000 miles — or more often if your air filter indicator signals that your filter needs cleaning.)

Mounting your pre-cleaner is simple:

1. Unlatch the rear cover and turn it so the air horn points up and latch 'er again.



2. Remove the 2 bottom screws that help hold the horn to the cover. Use 2 longer screws that come in your kit and attach the support bracket.

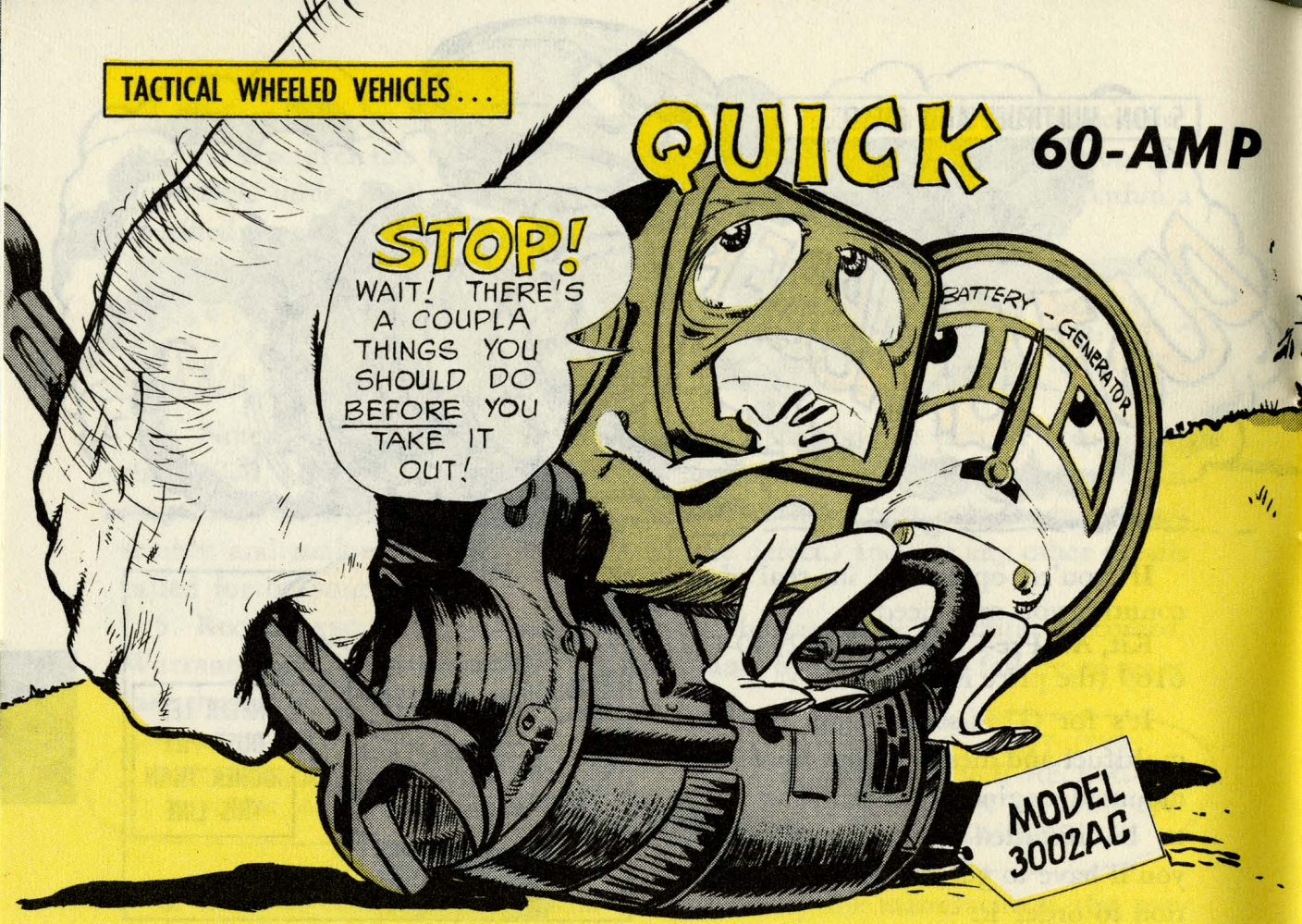


3. Install the pre-cleaner on the air horn (down as far as possible) and clamp it snug.

And make a note for yourself on these replacement parts:

Unit, pre-cleaner, FSN 2940-122-4713
Bracket, horn support, FSN 2940-121-6179
Screw, bracket holding, FSN 5305-269-3211

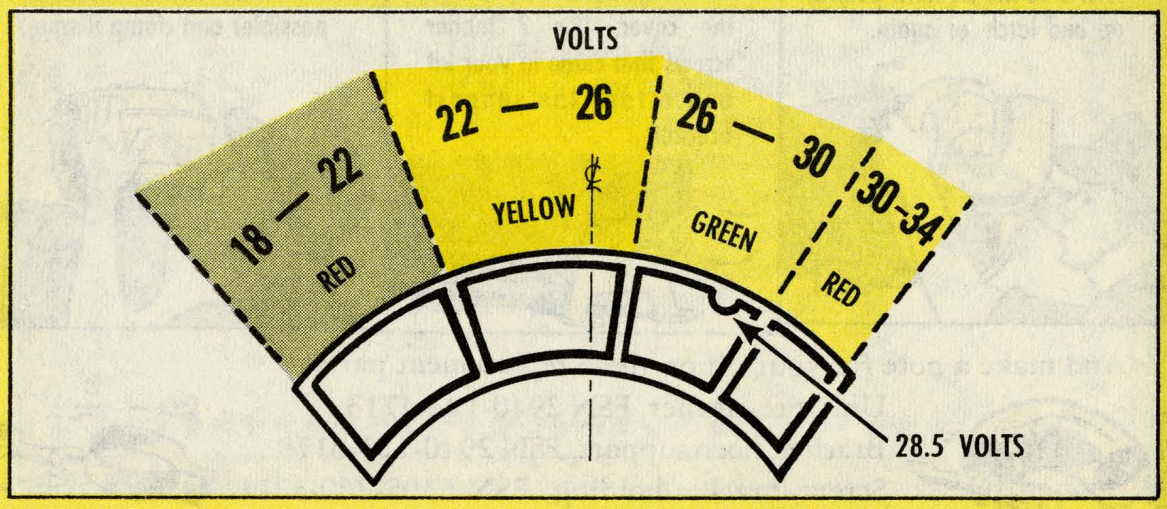
QUICK 60-AMP



Before yanking out your 60-amp Leece-Neville alternator when you suspect the generating system is on the fritz, it's wise to be certain the alternator is the guilty party. A few quick checks can put you on the right track and you can cure the problem like a real pro.

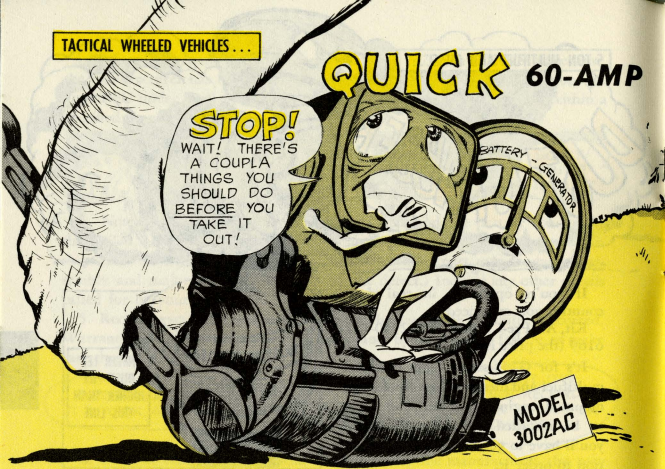
The trick is to use the Battery-Generator-Indicator that's on the dash as a voltmeter.

There are several types—pick out the one on your instrument panel and picture these voltages over the colored areas. . .



TACTICAL WHEELED VEHICLES . . .

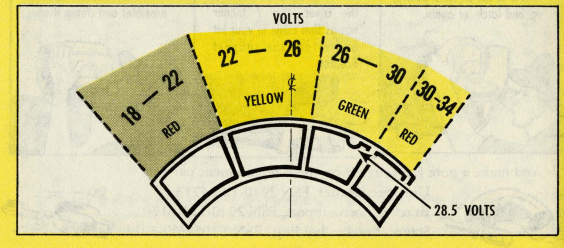
QUICK 60-AMP ALTERNATOR CHECK

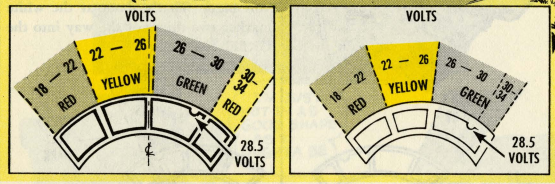


Before yanking out your 60-amp Leece-Neville alternator when you suspect the generating system is on the fritz, it's wise to be certain the alternator is the guilty party. A few quick checks can put you on the right track and you can cure the problem like a real pro.

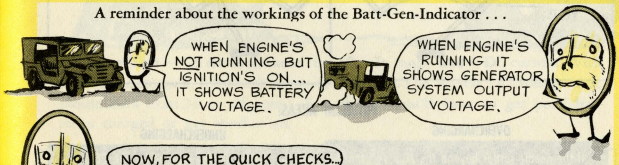
The trick is to use the Battery-Generator-Indicator that's on the dash as a voltmeter.

There are several types—pick out the one on your instrument panel and picture these voltages over the colored areas. . .





A reminder about the workings of the Batt-Gen-Indicator . . .



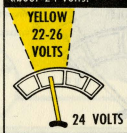
NOW, FOR THE QUICK CHECKS...

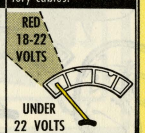
BATTERY CHECK

1st Check the condition of your batteries. Turn ON the ignition switch but don't start the engine. Make certain that all electrical units like the heater, radio, lights, etc., are turned OFF.

If your batteries have a good charge the BATT-GEN-IND needle should settle well into the YELLOW, indicating about 24-volts.

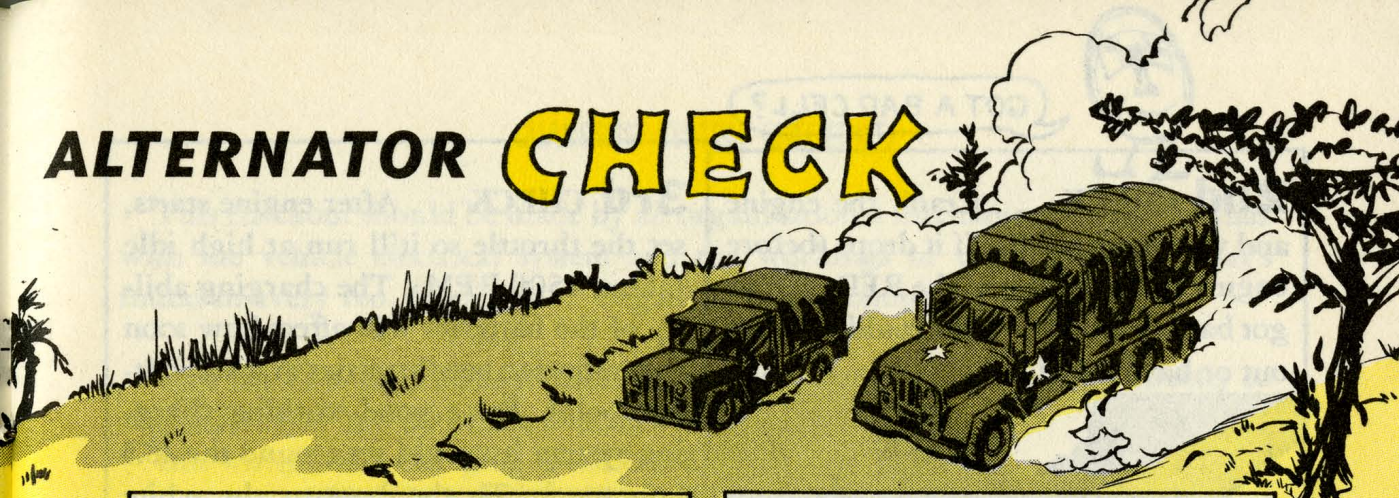
A needle that settles in the RED, or under 22-volts, means the batteries are weak, defective, need charging, or there's a short in the system, or loose battery cables.

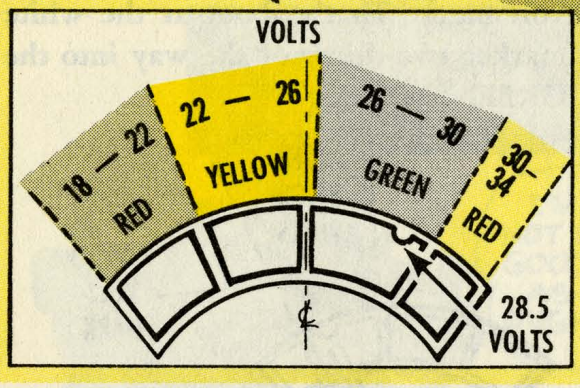


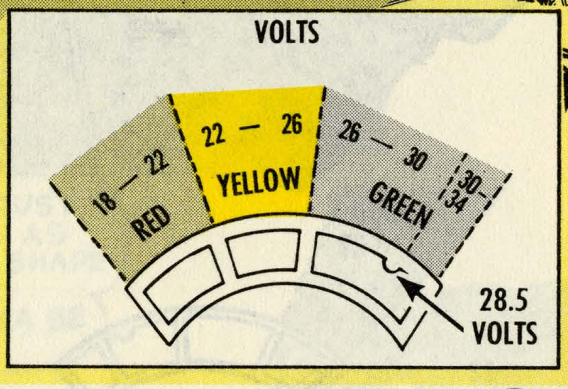


PS MORE

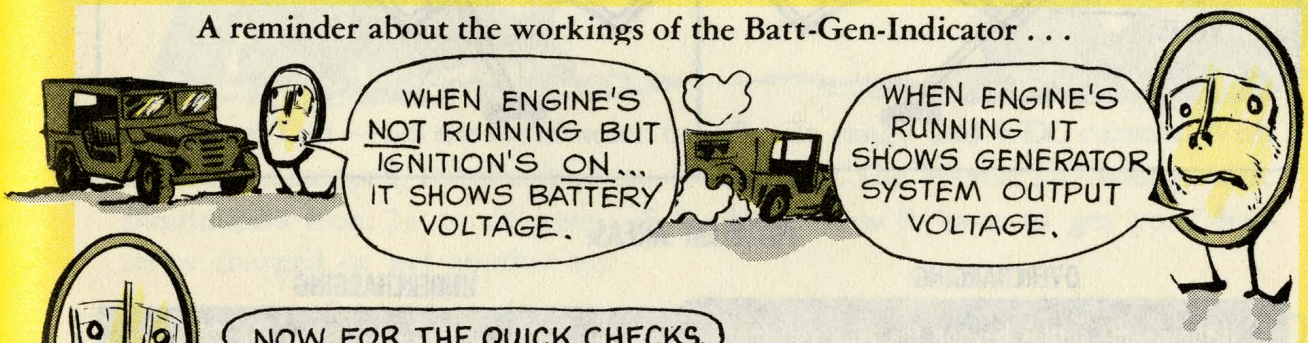
ALTERNATOR CHECK







A reminder about the workings of the Batt-Gen-Indicator . . .



BATTERY CHECK

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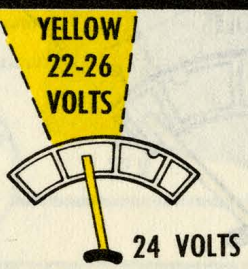
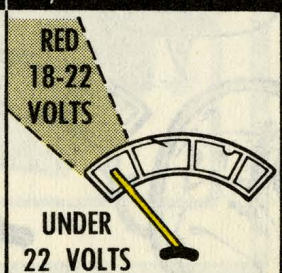
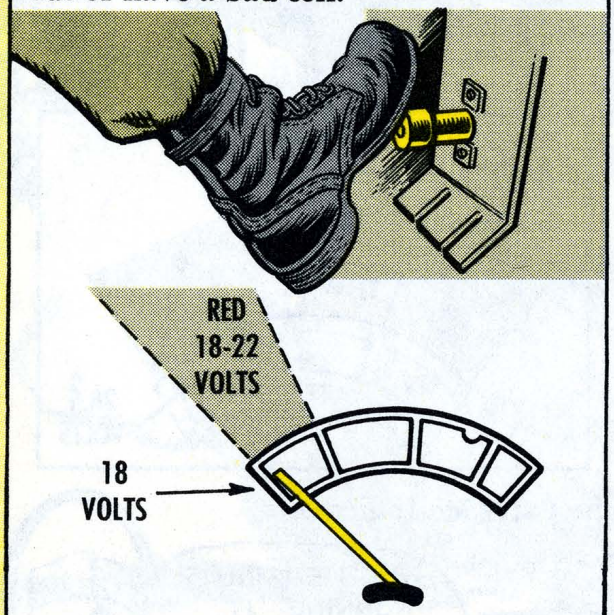


A needle that settles in the RED, or under 22-volts, means the batteries are weak, defective, need charging, or there's a short in the system, or loose battery cables.

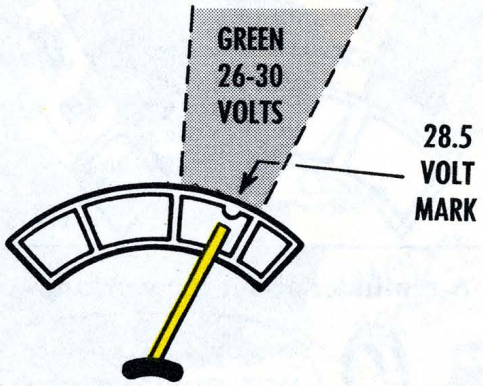


PS MORE

2nd CHECK . . . Crank the engine and watch the needle. If it drops (before engine starts) well into the RED, you've got battery trouble. They could be worn out or have a bad cell.



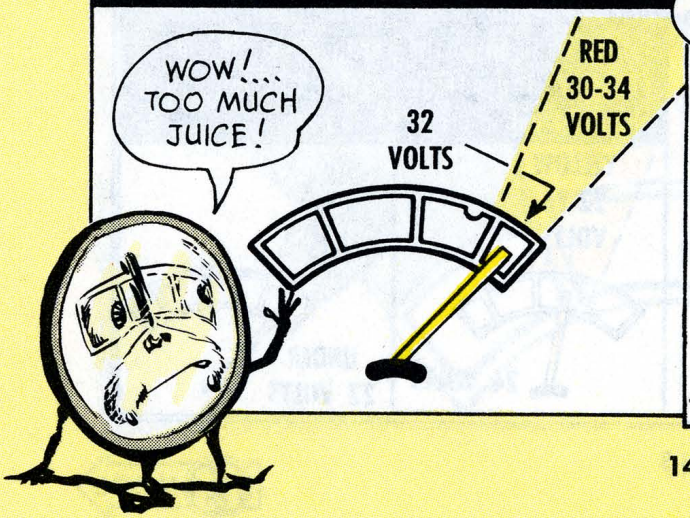
3rd CHECK . . . After engine starts, set the throttle so it'll run at high idle (about 1500 RPM). The charging ability of the batteries will affect how soon the indicator needle settles at a set voltage point. For a good-working charging system it should set around the 28.5 volt mark. That's about at the white marker two-thirds of the way into the GREEN section.



PROBLEM AREAS:

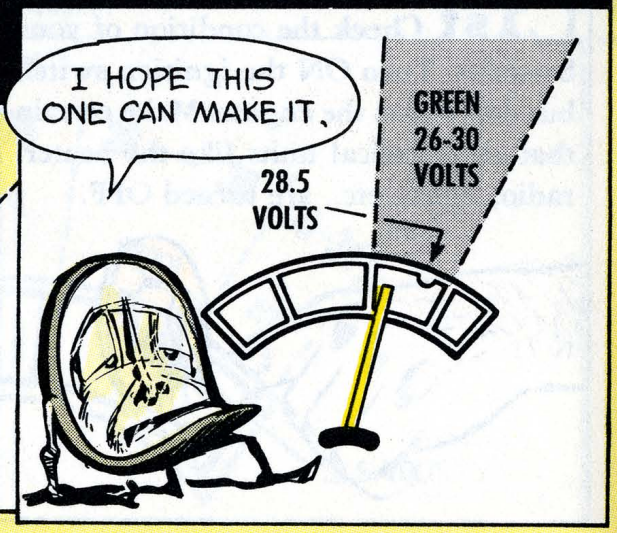
OVERCHARGING

1. If the needle settles beyond the 28.5 volt mark — in the 30 to 34-volt area (some Batt-Gen-Indicators have this section in GREEN) — the alternator is overcharging, or your batteries are in a state of overcharge. Most likely the alternator's overcharging. This calls for an adjustment. . . .



UNDERCHARGING

2. If the needle settles well below the 28.5 volt mark it means the system is not up to par and needs further checks, adjustment or a new alternator. . . .



CHARGING SYSTEM CHECKOUT:

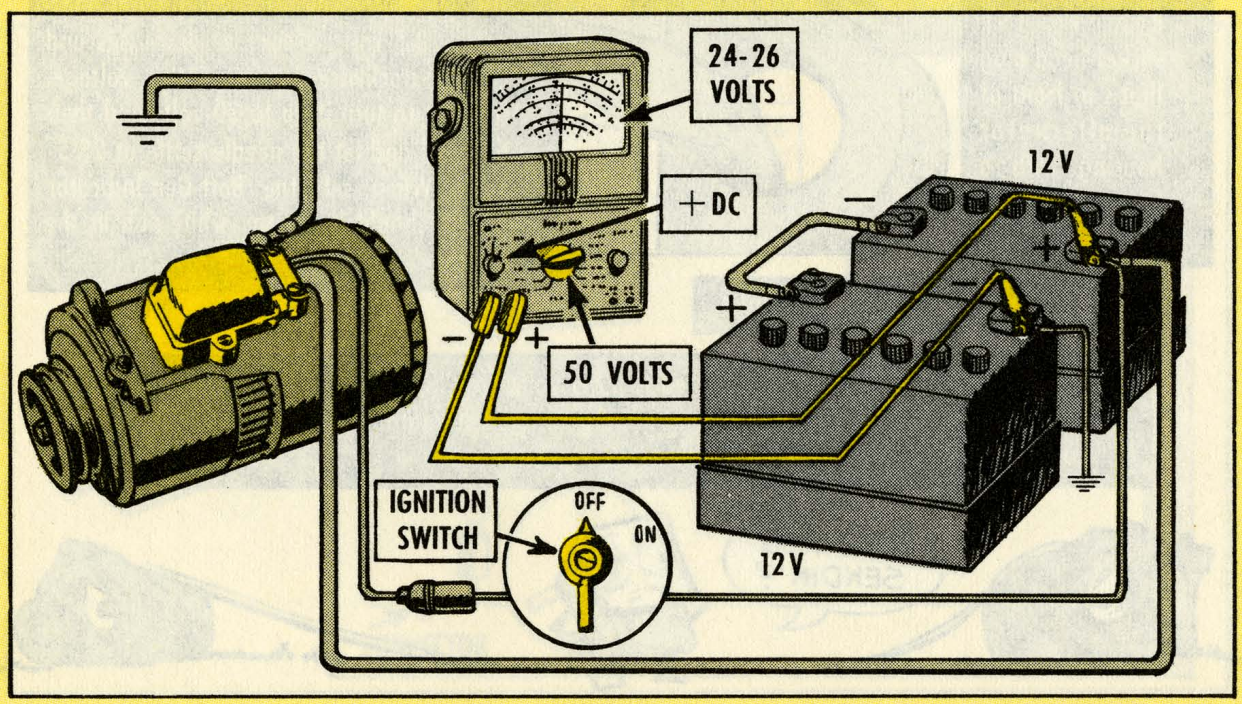
This checkout should be made by an organizational mechanic—a guy familiar with the vehicle electrical system and the workings of the multimeter that's found in every No. 1 and No. 2 Organizational Common Tool Set.

On a BATT-GEN-Indicator that shows overcharging, you can go directly to the alternator and make the adjustment. . . .

But when under-charging is indicated, first check out:

1. Condition of batteries.
2. Alternator belt tension.
3. Battery and alternator cable connections — especially ground.

Battery Test—Set the multimeter on 50-volt range and + DC current. With the engine stopped, connect it across the batteries. The 50-volt DC-voltage scale should show from 24 to 26-volts. If it doesn't you'll have to get your batteries charged or get another set.

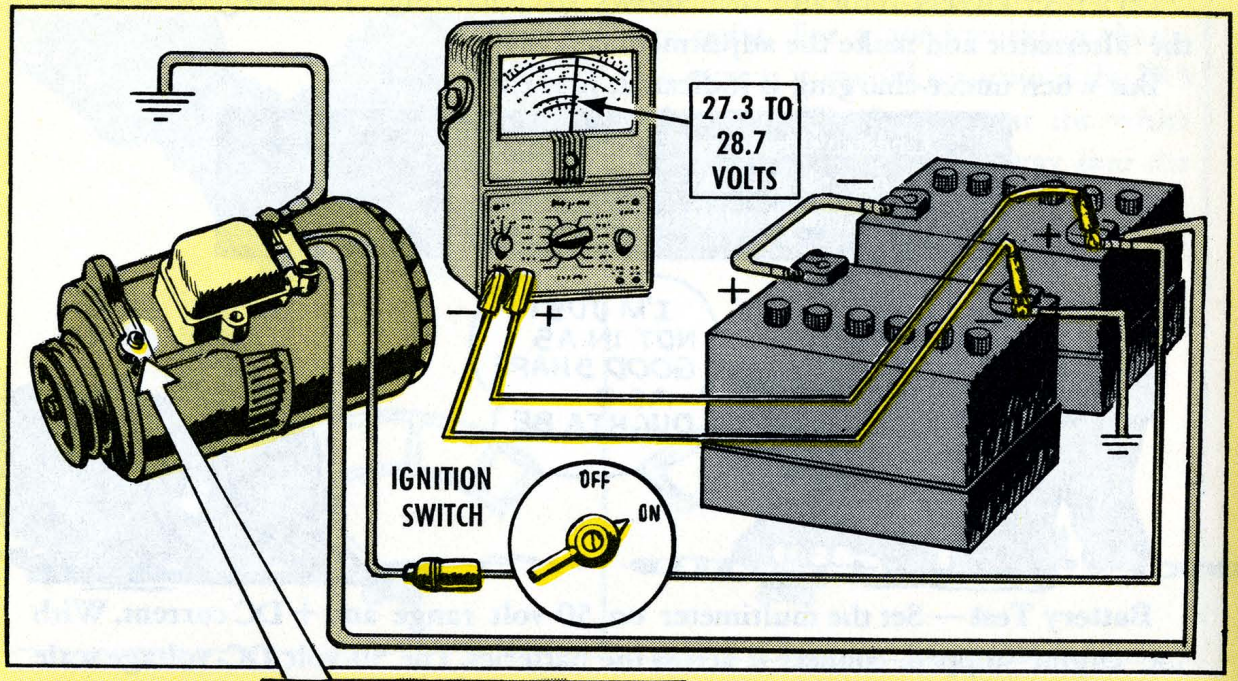


P.S. MORE

CHARGING TEST

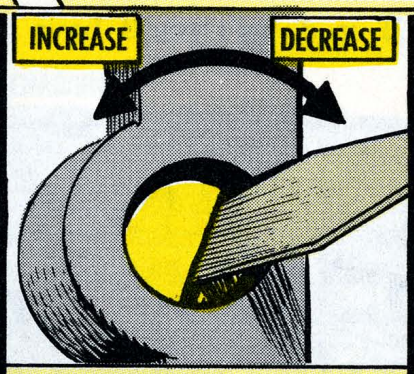
With good batteries and the multimeter hooked up across the batteries, start and run the engine at high idle (1500 RPM). When the engine runs smooth the multimeter needle should settle down between 27.3 to 28.7 volts.

If the multimeter needle doesn't fall within this voltage range the alternator needs adjusting. . . .



ALTERNATOR ADJUSTMENT

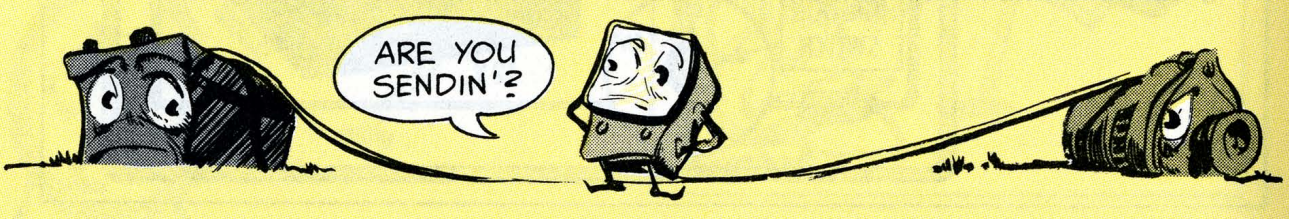
1. Remove the socket-head plug that's in front of the alternator housing with a hex L-type key wrench.



2. While engine's running, insert a small screwdriver and turn the rheostat inside the alternator until the multimeter indicates 28.5-volts. Clockwise decreases and counter-clockwise increases the voltage. It's best to turn it up to 30-volts and then back off and let the needle settle at 28.5-volts. When set, the Batt-Gen-Indicator needle should be at the white nub in the GREEN.

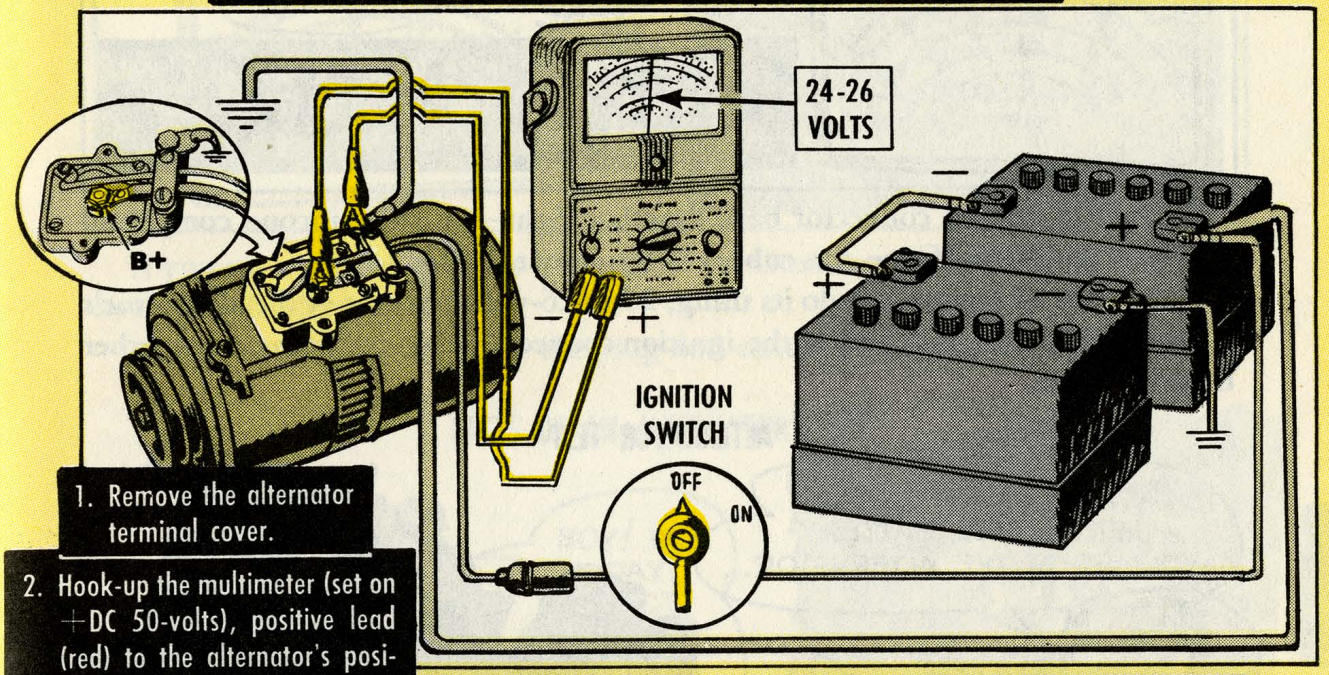
3. If it adjusts OK — replace the plug.

4. But if the alternator cannot be adjusted to 28.5-volts, you'll have to make further tests to see whether the battery voltage is getting to the alternator — it can't work if it isn't getting battery juice to start with.



BATTERY VOLTAGE AT ALTERNATOR TEST

Turn off the engine and leave the ignition switch OFF. Then . . .

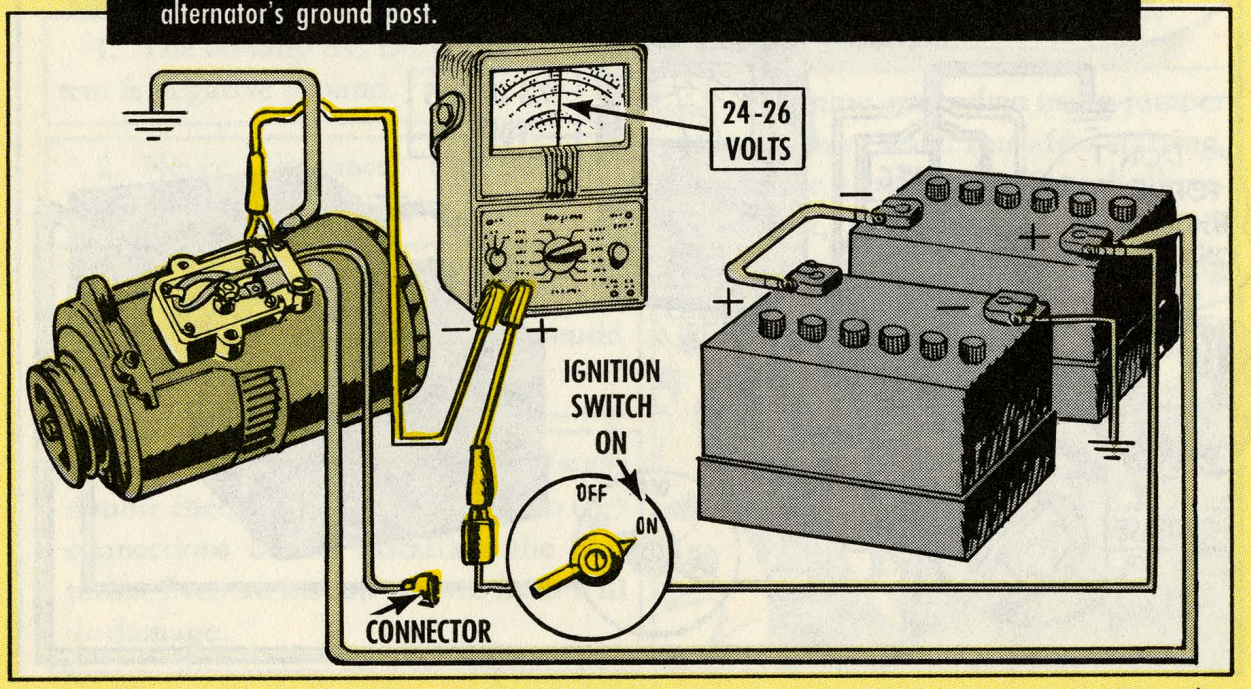


1. Remove the alternator terminal cover.

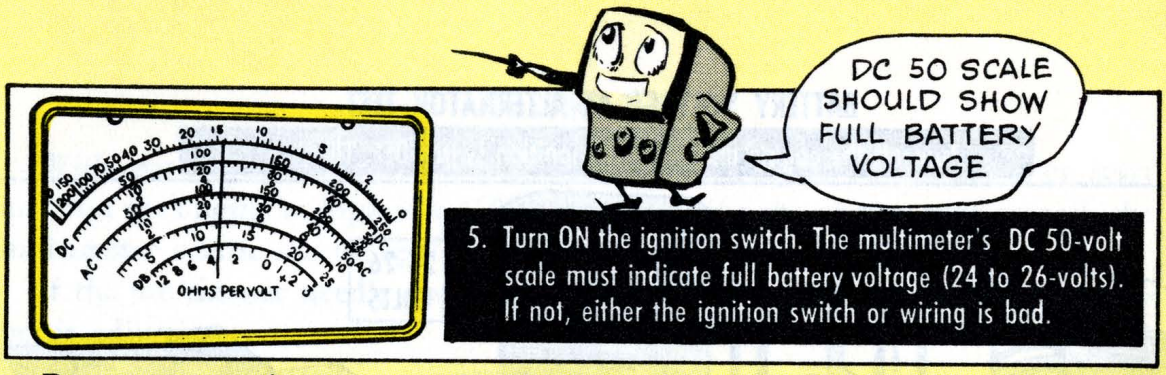
2. Hook-up the multimeter (set on +DC 50-volts), positive lead (red) to the alternator's positive (B+) terminal. The multimeter's negative (black) lead goes to the alternator's ground terminal.

3. When hook-up is made the multimeter's DC 50-volt scale should show full battery voltage (24 to 26-volts). If it doesn't, then there's an open circuit between the alternator and battery; it may be caused by loose connections or broken wiring.

4. Next, disconnect the rubber waterproof connector on the small wire leading to the ignition switch. Strip back the rubber on the switch side and connect the multimeter's positive (red) lead. Leave the multimeter's negative (black) lead connected to the alternator's ground post.

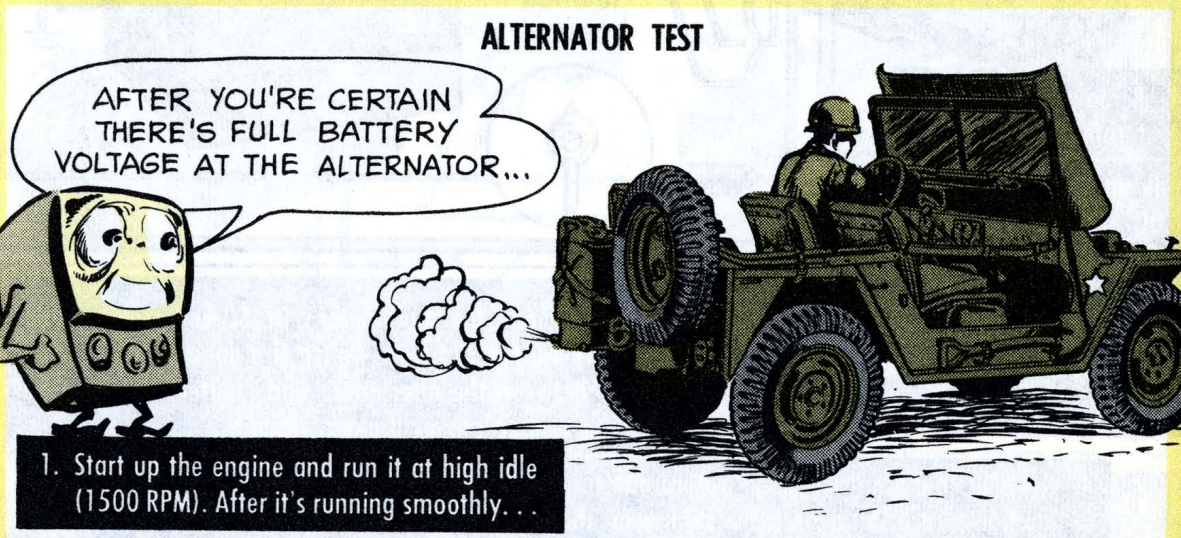


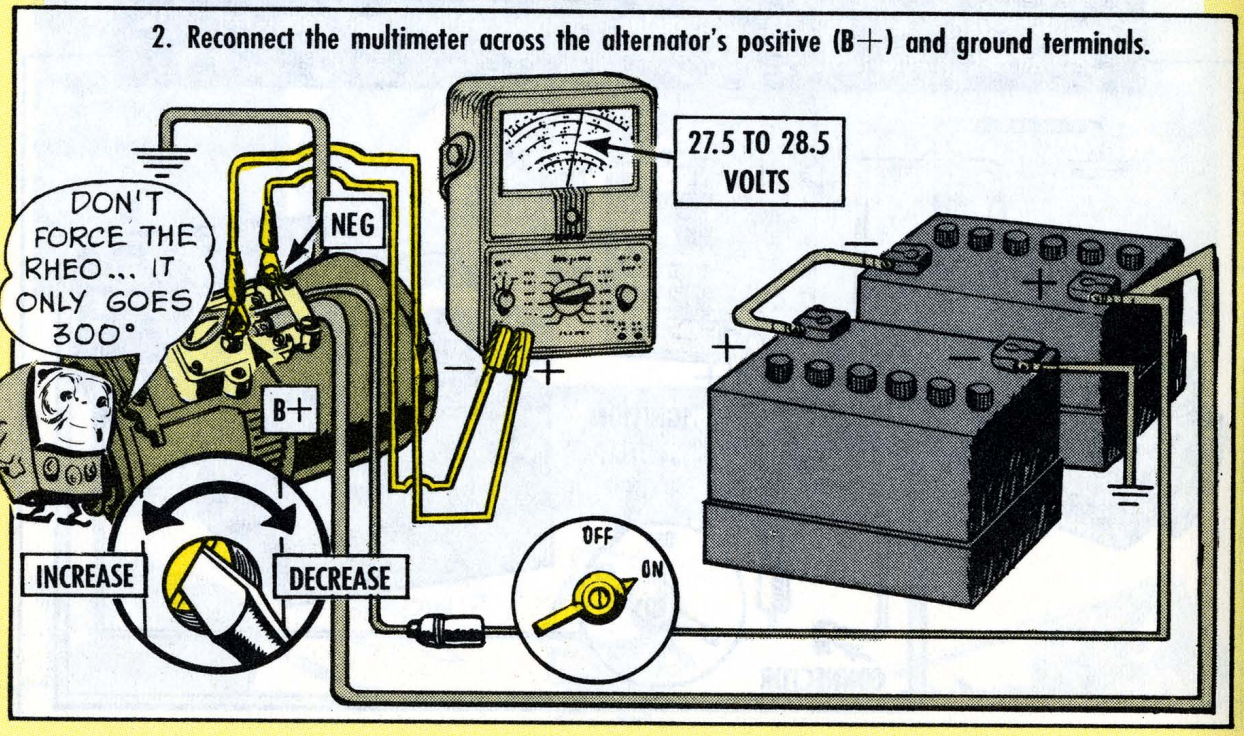
PS MORE

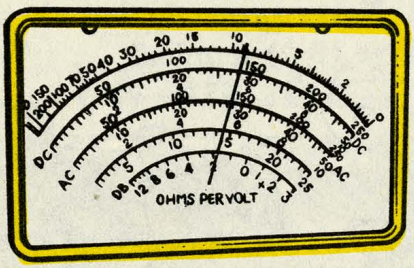


Be sure to put the connector back together right—a little silicone compound (FSN 6850-880-7616) on the rubber'll let it mate easily.

Before the alternator can do its thing, 24 to 26-volts must be at the alternator's positive (B+) terminal and at the ignition connection. No use going any further until it's there.





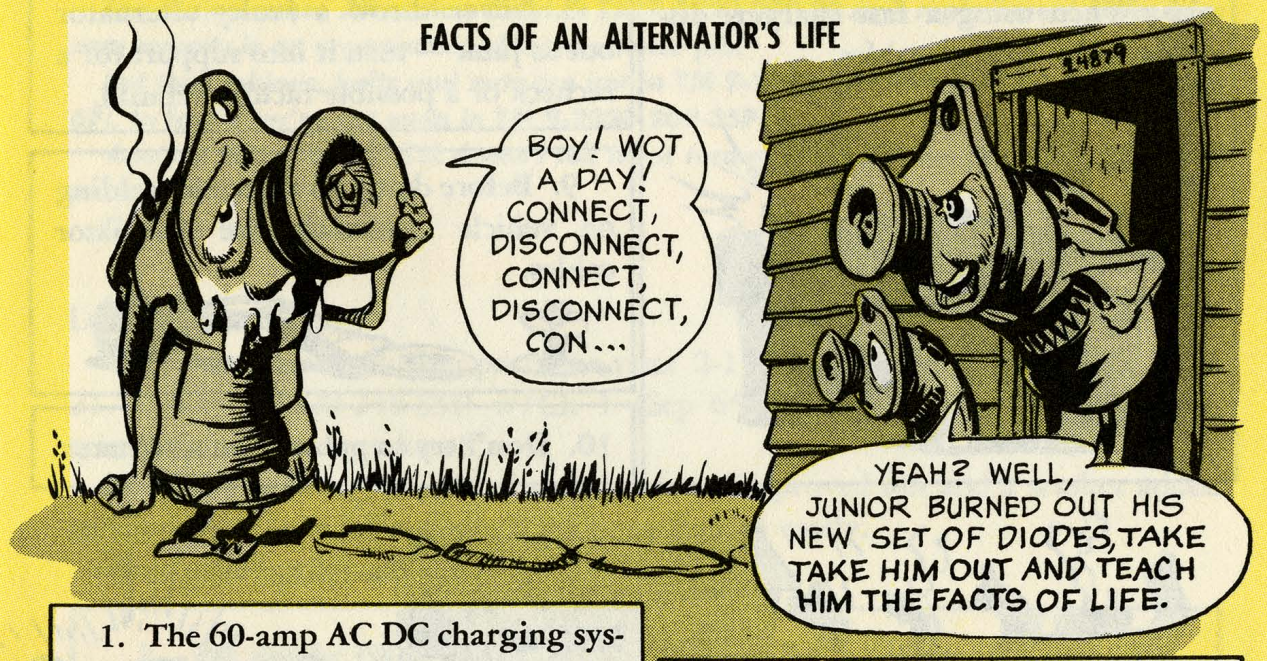


3. Now adjust the alternator's internal rheostat until the multimeter's DC 50-volt scale shows 28.5-volts. Don't force the rheostat; its full turn is about 300 degrees. When you've adjusted to 28.5-volts, the Batt-Gen-Indicator needle should be two-thirds into the GREEN.

If you can't get the 28.5-volt adjustment the alternator is on the fritz and must be replaced. That's it . . .

And don't forget to replace the plug and terminal cover after adjusting.

FACTS OF AN ALTERNATOR'S LIFE



1. The 60-amp AC DC charging system is negative ground.

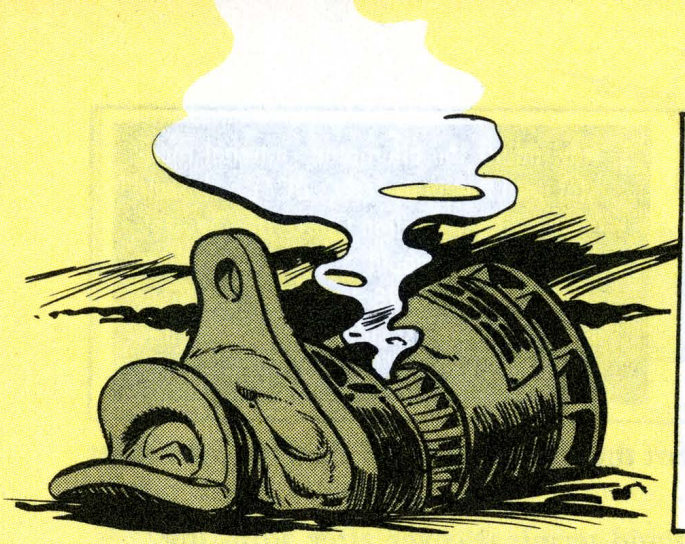
2. Never disconnect the batteries while engine is running.

3. When working on the electrical system, disconnect the battery ground cable.

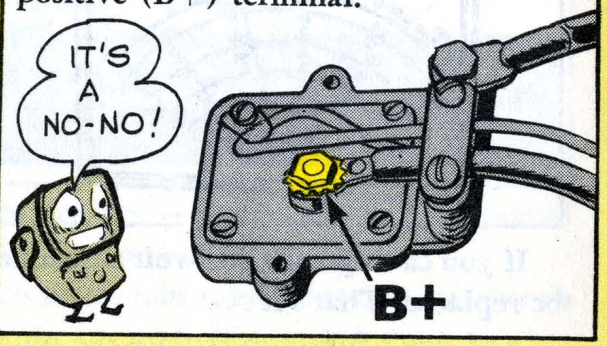
4. **Never reverse polarity** — always double check (−) to (−) and (+) to (+) connections before installing the batteries. Even an instant reverse flash will do damage.

5. The same goes when using jumper cables to slave start. But after starting, remove the ground cable from **both** vehicles first, then remove the positive cable. This'll head off dangling flashing cables.

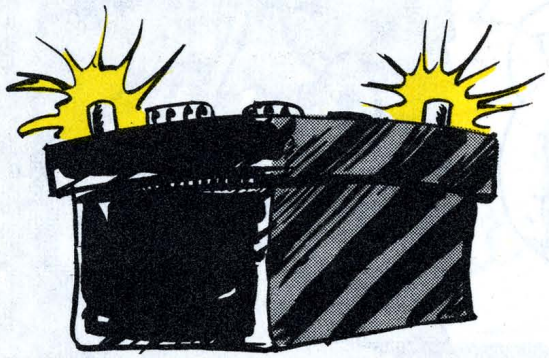
PS MORE



7. **Never** ground the alternator's positive (B+) terminal.



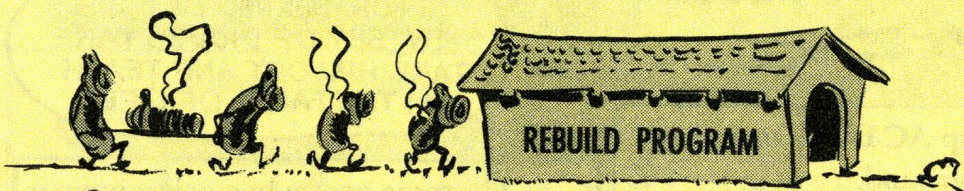
6. When using a fast charger, disconnect the battery cables.



8. **Never** throw a faulty alternator out as junk — turn it into support for a recheck or a possible factory rebuild.

9. Before doing any electric welding on vehicle disconnect the alternator cables.

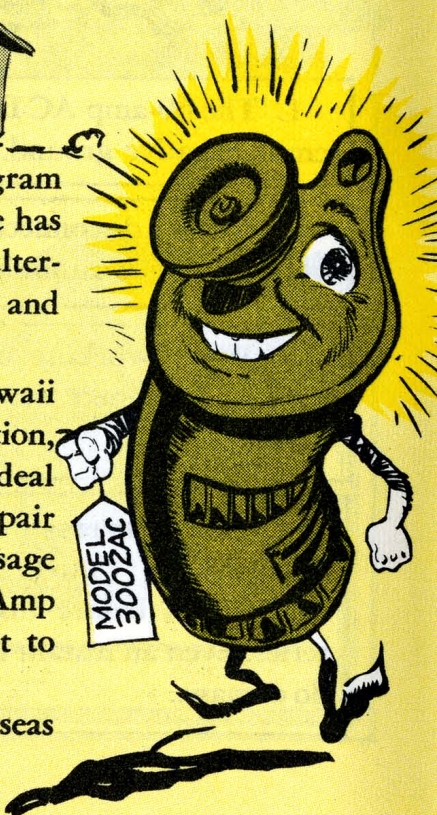
10. **Don't** try to polarize an alternator.



Once upon a time there was no repair or rebuild program for the Leece-Neville 60-amp AC DC alternator but time has a way of making changes. So don't throw away faulty alternator's; turn 'em in. (see TB 750-981-1 (Jan 70) pgs 31 and 33).

Posts, camps and stations in CONUS, Alaska and Hawaii can now send their faulty alternators, regardless of condition, to the Leece-Neville factory for rebuild under a special deal worked out with the manufacturer. The details on this repair and rebuild program are covered in AMCPM-GPV-S message 10-5089 dated 7 Oct 1969, subject: Repair of 60 Amp Generator/Alternator, FSN 2920-909-2483. It was sent to all CONUS Army and Major Command Headquarters.

So far, this program has not been set up for overseas commands.



Dear Half-Mast,

The Maintenance Allocation Chart in TM 9-2320-209-20 says replacement of transfer case mounts is an organizational maintenance job.

But the cushions, bolts and nuts are not in TM 9-2320-209-20P w/Ch 1 & Ch 2 (Apr 69). In fact, they're not even in TM 9-2320-209-35P.

Another thing, the -20 TM doesn't tell what torque to give those mounting bolts and nuts.

Can you lend a hand?

CW3 A. H. A.

Dear Mr. A. H. A.,

Those transfer mounting parts for your 2-1/2-ton trucks are listed on page 21 of TM 9-2520-246-35P w/Ch 1 (Sep 65), the TM for the transmission, transfer and power take-off.

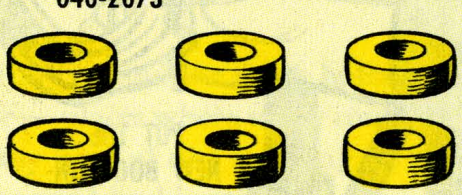
But there've been a couple of switches — an improved nut and a washer added to keep your transfer mounts from loosening so easily.

Here's the rundown:

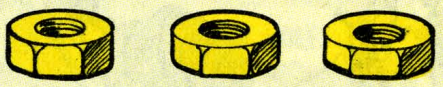
2 — Bolt, shoulder, FSN 5306-752-1549

1 — Bolt, shoulder, FSN 5306-752-1548

6 — Insulator, mounting, FSN 5340-040-2073



3 — Nut, self-locking, FSN 5310-275-2049



3 — Washer, flat, FSN 5310-022-3305

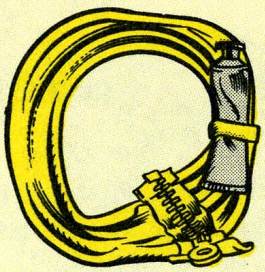
The torque is 62-68 lb ft — listed in Appendix I, Torque Chart, TM 9-2320-209-35.

Half-Mast

FOR MECHANICS...

BOOT IT GOOD

Use your noggin—all the time—when you dig into a CV—constant velocity—steering knuckle boot. It's no snap job.



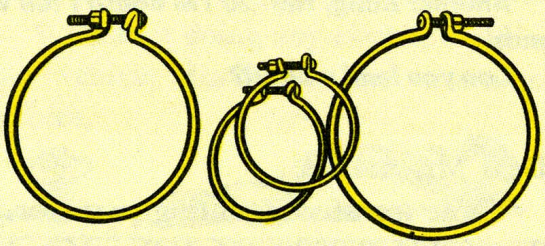
BOOT KIT COMES WITH CEMENT

All the words in the world won't help if you bend or force the clamps, strip or bust the screws and nuts—or twist the CV boot into place.

When you don't know the score, find out. See your TM.

Get yourself under the fender of a deuce-and-a-half with a guy who has savvy. You'll find him in step with TM 9-2320-209-20 (Apr 65) and always looking for damaged parts. He'll reuse any good hardware.

If you're shy only a machine clamp screw, get FSN 5305-752-1693. For just a plain clamp nut, use FSN 5310 707-1097.

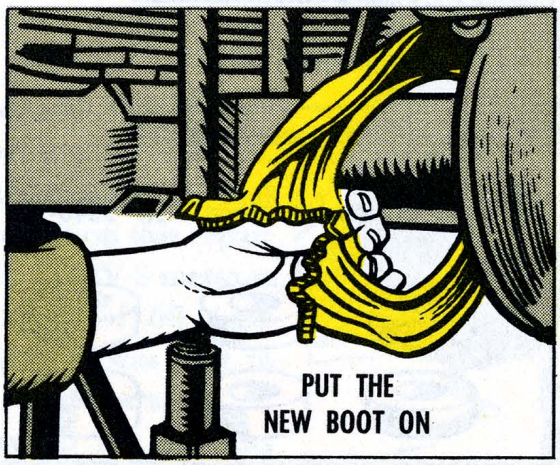


STEERING KNUCKLE CLAMP

INNER CLAMP LOOPS

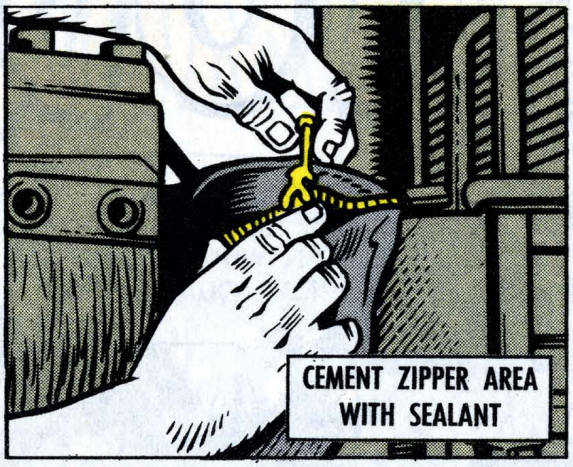
OUTER CLAMP LOOP

See how the man with know-how cuts and takes off the old boot and puts on the new one—inside out. Grease can't ooze out of the boot and water can't seep in when the zipper area is sealed with cement.



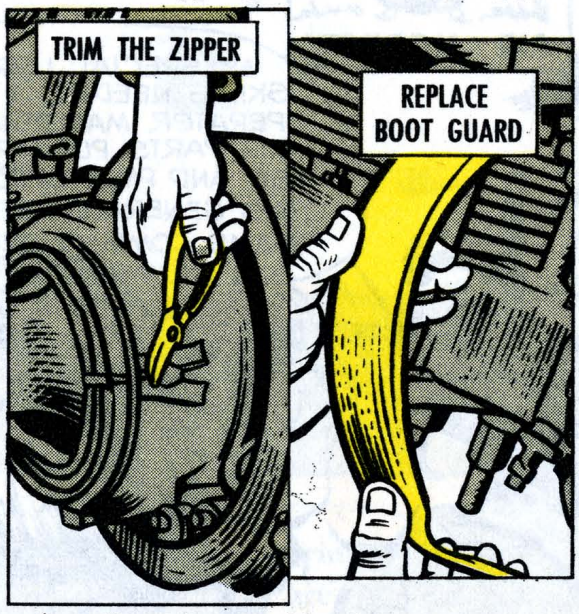
PUT THE NEW BOOT ON

He'll be sure to aline the word "TOP" with the center of the steering knuckle upper sleeve and set the inner clamp into the groove made for it.



With a twist of the wrist the boot'll go right side out and the bigger clamp will be fitted snugly in, all around the steering knuckle groove.

Wrap up by locking the zipper with fine wire, lopping off the excess zipper



and sealing the outside zipper area.

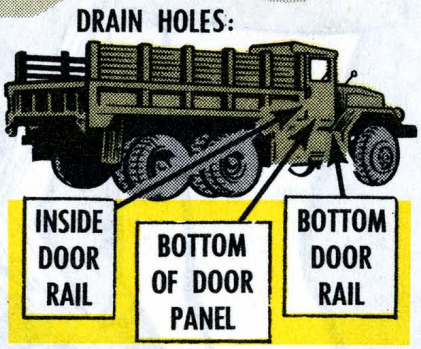
When the boot guard goes on, the job'll be done—but right!

DRAIN-HOLE DOPE

You gotta bend, stoop, peer and poke to find all the drain holes on your wheeled vehicles. But it's all worth it.

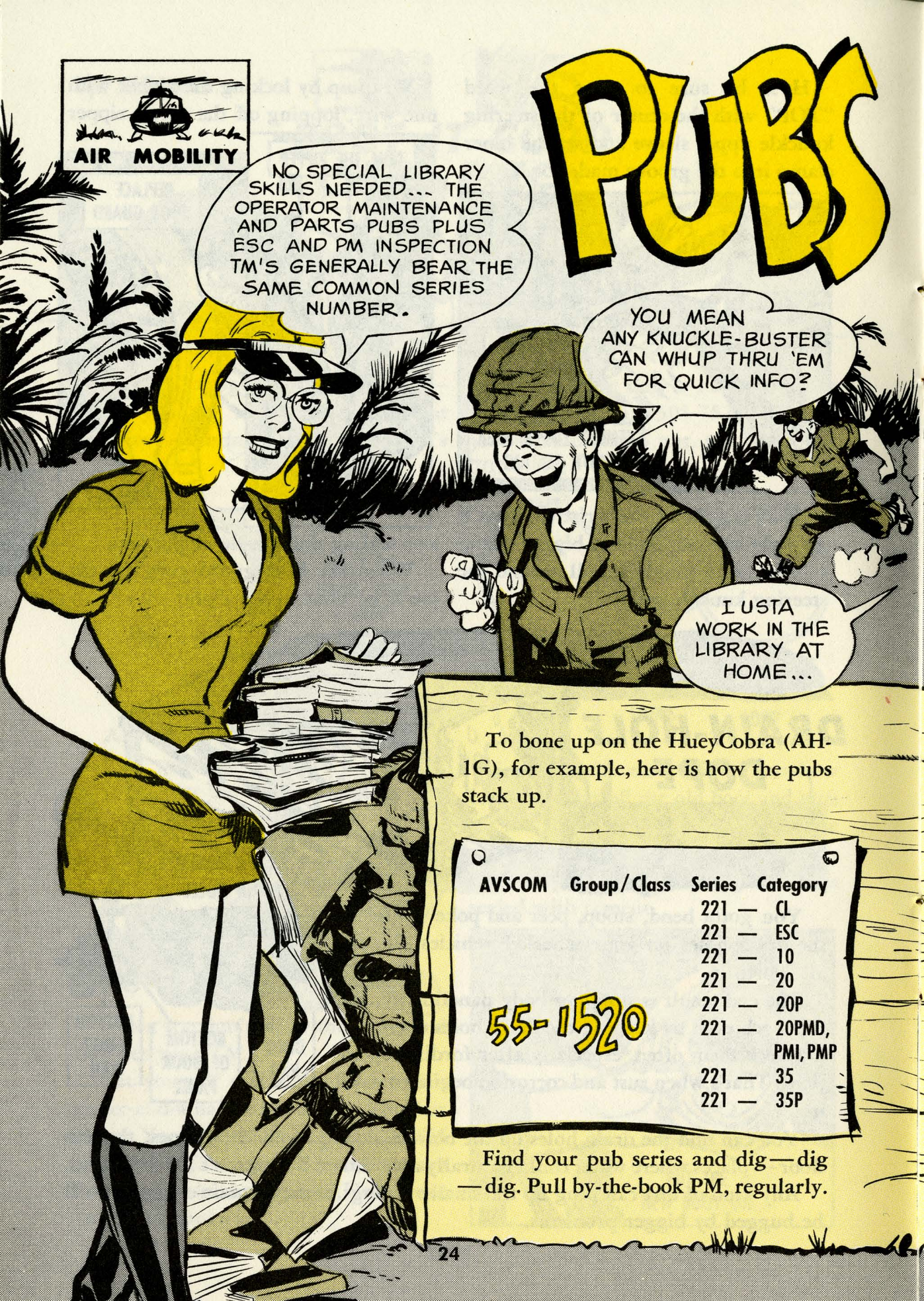
The end result is stopping body panel decay, and this's achieved by keeping the drain holes open.

Check them often, especially after fording operations. That's when rust and corrosion begins to work in.



You can find the drain holes on the bottom door panels, the frames, the cab floor—places where water could naturally accumulate if it weren't for the drains.

Any kind of dirt can plug up the small openings. If they remain clogged you'll be bugged by bigger problems.



To bone up on the HueyCobra (AH-1G), for example, here is how the pubs stack up.

AVSCOM	Group/Class	Series	Category
55-1520		221 —	CL
		221 —	ESC
		221 —	10
		221 —	20
		221 —	20P
		221 —	20PMD, PMI, PMP
		221 —	35
		221 —	35P

Find your pub series and dig—dig—dig. Pull by-the-book PM, regularly.

AIR MOBILITY

PUBS

To bone up on the HueyCobra (AH-1G), for example, here is how the pubs stack up.

AVSCOM	Group/Class	Series	Category
55-1520		221	CL
		221	ESC
		221	10
		221	20
		221	20P
		221	20PMD, PMI, PMP
		221	35
		221	35P

Find your pub series and dig—dig—dig. Pull by-the-book PM, regularly.

BY-THE-NUMBERS

Group/Class	Series	(FIXED WING) Aircraft
1510	201	U-8 Seminole
	202	O-1 Bird Dog
	203	U-6A Beaver
	204	OV-1 Mohawk
	205	U-1A Otter
	209	U-21A Ute

Group/Class	Series	(ROTARY WING) Aircraft
1520	201	UH-19 Chickasaw
	202	CH-34 Choctaw
	203	CH-37 Mojave
	205	CH-21 Shawnee
	206	OH-23 Raven
	214	OH-6A Cayuse
	217	CH-54A Tarhe
	221	AH-1G Huey Cobra
	228	OH-58A Kiowa

The manual numbering for the Sioux Chinook, and Huey are different. Like so:

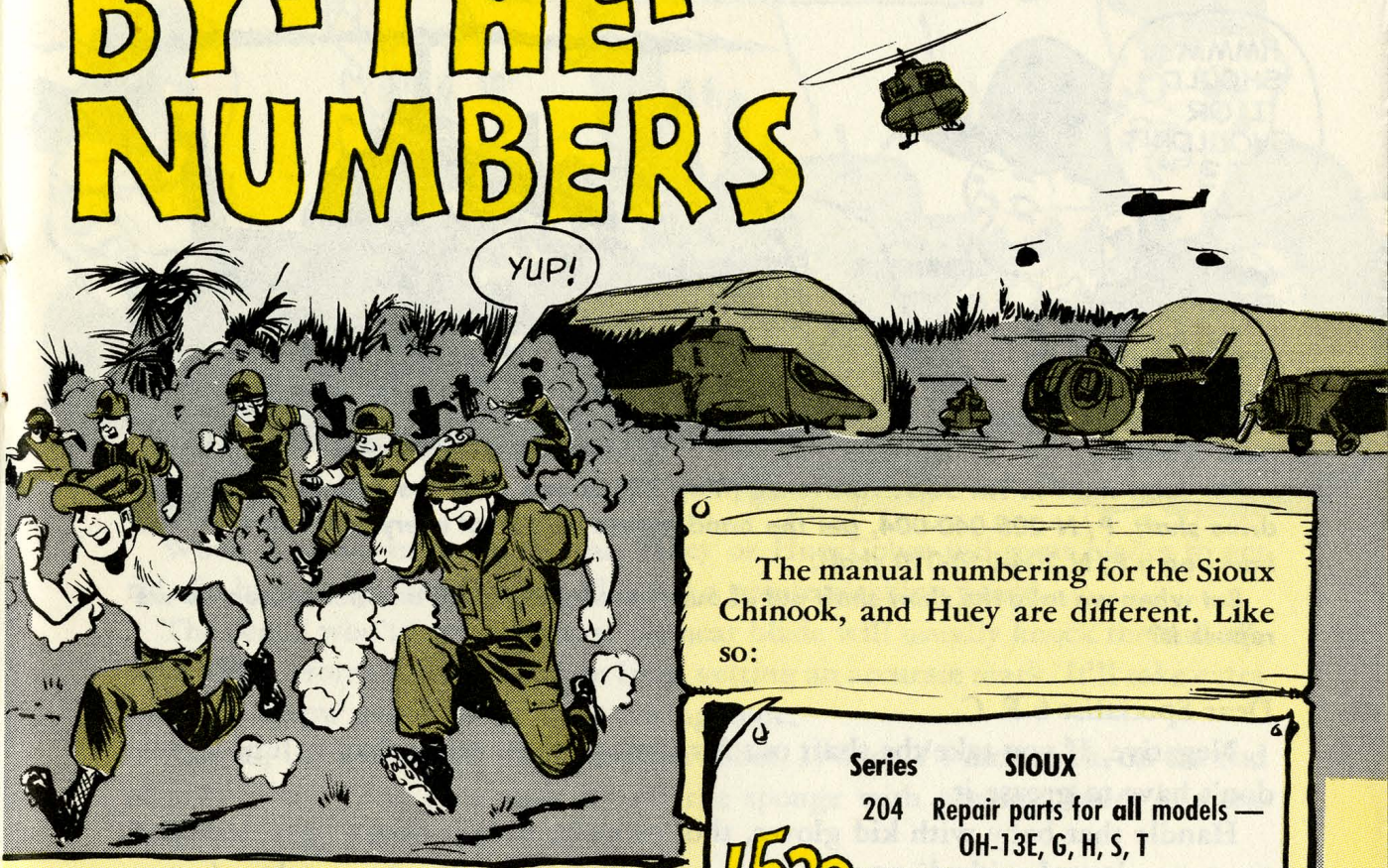
Group/Class	Series	SIOUX
1520	204	Repair parts for **all** models — OH-13E, G, H, S, T
	224	OH-13E, G, H
	225	OH-13S
	226	OH-13T

Group/Class	Series	CHINOOK
1520	209	CH-47A, and repair parts for **all** models — CH-47A, CH-47B and CH-47C
	227	CH-47B, CH-47C

Group/Class	Series	IROQUOIS (HUEY)
1520	210	UH-1D/H, and repair parts for **all** models — UH-1A, UH-1B, UH-1C/M and UH-1D/H.
	218	UH-1A
	219	UH-1B
	220	UH-1C/M

For all the pubs on aircraft maintenance, eye a copy of DA Pamphlet 310-4, the index to technical publications.

BY-THE-NUMBERS



The manual numbering for the Sioux Chinook, and Huey are different. Like so:

(FIXED WING)

Group / Class	Series	Aircraft
1510	201 —	U-8 Seminole
	202 —	O-1 Bird Dog
	203 —	U-6A Beaver
	204 —	OV-1 Mohawk
	205 —	U-1A Otter
	209 —	U-21A Ute

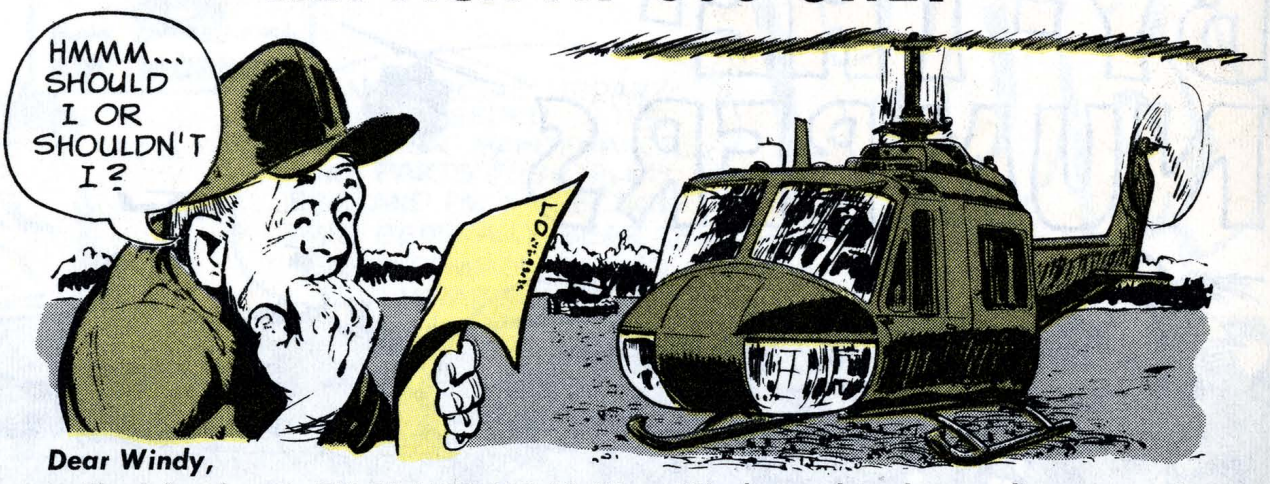
(ROTARY WING)

Group / Class	Series	Aircraft
1520	201 —	UH-19 Chickasaw
	202 —	CH-34 Choctaw
	203 —	CH-37 Mojave
	205 —	CH-21 Shawnee
	206 —	OH-23 Raven
	214 —	OH-6A Cayuse
	217 —	CH-54A Tarhe
	221 —	AH-1G Huey Cobra
	228 —	OH-58A Kiowa

	Series	SIOUX
1520	204	Repair parts for **all** models — OH-13E, G, H, S, T
	224	OH-13E, G, H
	225	OH-13S
	226	OH-13T
		CHINOOK
1520	209	CH-47A, and repair parts for **all** models — CH-47A, CH-47B and CH-47C
	227	CH-47B, CH-47C
		IROQUOIS (HUEY)
1520	210	UH-1D/H, and repair parts for **all** models — UH-1A, UH-1B, UH-1C/M and UH-1D/H.
	218	UH-1A
	219	UH-1B
	220	UH-1C/M

For all the pubs on aircraft maintenance, eye a copy of DA Pamphlet 310-4, the index to technical publications.

REPACK AT 600 ONLY



Dear Windy,

The lube chart in TM 55-1520-210-20 (May 69) shows that the couplings on main drive shaft, P/N 205-040-004, get the hand grease treatment every 600 hours . . . 100 hours on a P/N 204-040-010 shaft.

But when we take the short shaft out of our H model Huey for another reason do we repack it?

SP6 R. C.

Dear Specialist 6 R. C.,

Negative. If you take the shaft out for some purpose other than to lube it, you don't have to grease it.

Handle that baby with kid gloves, tho, to make sure it doesn't get damaged or contaminated with dirt.

Windy

SAVE THE BARRELS!

Cayuse and Kiowa hotshots—no itchy trigger fingers, please!

Never recycle the trigger to prevent interruption of firing by the burst limiter on your XM27E1 subsystem. The limiter allows a maximum of 3 seconds firing per burst to prevent the barrels from burning out.

Short bursts are recommended.

If a combat emergency requires firing a full complement of 2,000 rounds of ammo or a major part of the complement by continued recycling of the burst limiter, a minimum of 15 minutes cooling time is required before starting to fire the next complement.

If you must recycle the trigger in a combat emergency, write it up so that the armament types can give the barrels the big look in accordance with the poop in para 3-12b of TM 9-1005-298-12 (7 Aug 69).

When it comes to tracking your Huey or HueyCobra tail-rotor blades to get rid of a high freq vibration, lay off using a grease marking pencil.

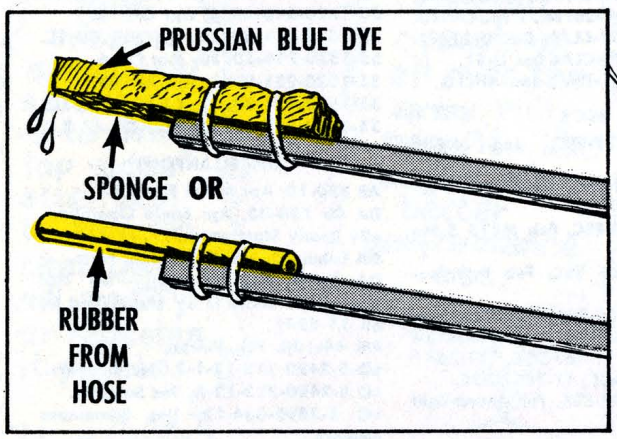
The pencil won't hack it because the near blade will usually knock the end off, or at least deform it, and keep you from getting an accurate mark. It'll take extra time and elbow grease to get the tracking done.

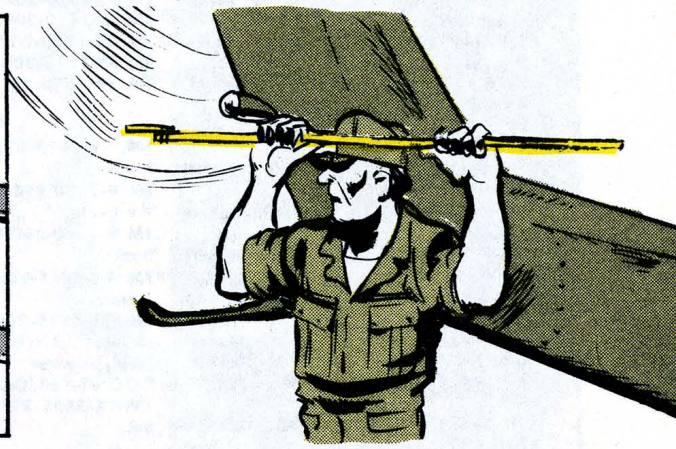
Instead, use a small piece of sponge rubber, 1/8 to 1/4 inch thick, on the end of a 1/2 by 1/2-in pine stick. Cover the sponge with prussian blue, or some other coloring, thinned with oil.

A small piece of soft black rubber from a hose also does an excellent job of marking the blades . . . no coloring needed.

Ask your favorite throttle jockey to crank up the bird.

At 6600 RPM, tail-rotor pedals in neutral, make your move.

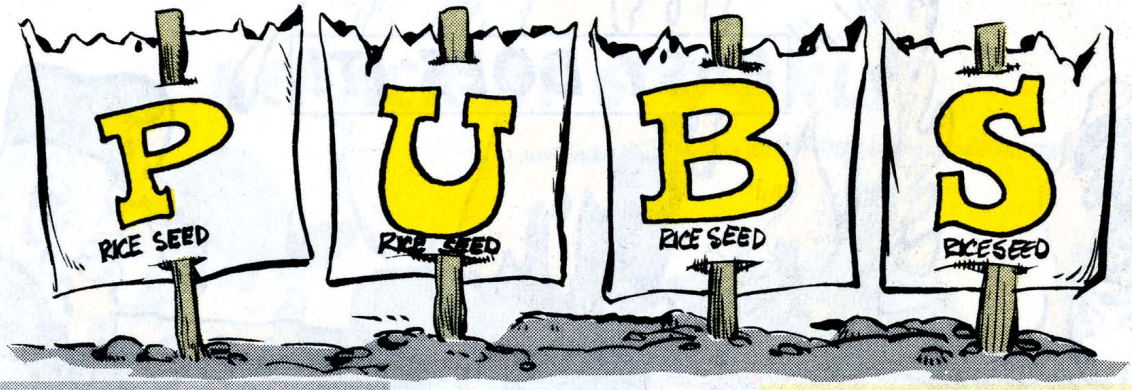




Rest the marker stick on the underside of the tail boom and slowly move it into the rotor, just far enough to touch the near blade, about 1 inch from the tip.

After engine shut-down, eye the rotor when it stops. Shorten the pitch change link of the marked blade and track the blades once more.

With a reliable marker, chances are you'll get the blades in track on the first try.



This is a selected list of recent pubs of interest to organizational maintenance personnel. This list is compiled from recent AG Distribution Centers Bulletins. For complete details see DA Pam 310-4 (Jun 69), and Ch 4 (Feb 70), TM's, TB's, etc.; DA Pam 310-6 (Jul 69), and Ch 3 (April 70), SC's and SM's; DA Pam 310-7 (Dec 69), MWO's and DA Pam 310-9 (May 69), COMSEC Pubs.

TECHNICAL MANUALS

TM 3-4240-258-14, C3, Feb Mask, CBR, M17A1.
TM 5-2410-209-12, C4, Mar Medium Tractors.
TM 5-2420-218-20P, Jan, Wheeled Tractor DED.
TM 5-2805-203-14, Dec Gas Eng 6 HP.
TM 5-3431-213-14, Dec Inert Gas Welder.
TM 5-3805-219-20P, Jan Loaders.
TM 5-3820-208-20P, Mar Rock Drill Equip.
TM 5-3895-332-12, Jan Pile Driving Hammers.
TM 5-4120-274-20P, Feb Air Conditioners: Electric 9,000 BTU.
TM 5-4120-307-15, Feb Air Cond 18,000 BTU.
TM 5-4210-200-10, C4, Apr Fire Fighting Equip.
TM 5-4310-214-25P, C2, Mar Air Comp 15 CFM.
TM 5-4610-202-12, Jan Water Purification Equip.
TM 5-4920-200-25P, Feb Gas Turbine Engines.
TM 5-6115-214-10, C6, Mar Operator, 45 KW, 400 HZ.
TM 5-6115-214-25P, C2, Mar Gen 45 KW, 400 HZ.
TM 5-6115-312-20P, Mar Gen 5 KW 60 HZ; 120, 208-V.
TM 5-6115-329-15, C3, Mar Gen 5 KW, 400 HZ.
TM 5-6115-332-12, C2, Mar Gen Sets 5 KW, 60 HZ.
TM 5-6115-240-15, C7, Mar Gen 45 KW, 400 HZ.
TM 5-6115-240-25P, C2, Mar Generator Sets, Eng Driven 45 KW, 400 HZ.
TM 5-6115-425-12, C2, Mar Gen 60 KW.
TM 5-6115-450-15, C1, Mar Gen 10 KW, 400 HZ.
TM 5-6665-202-15, C5, Mar Land Mine Det Equip.
TM 5-6665-203-12, Dec Land Mine Detect Equip.
TM 9-1000-205-12, C5, Mar 106-MM Recoilless Rifle.
TM 9-1425-470-12, Mar TOW.
TM 9-2320-218-20, C1, Jan M151.
TM 9-2320-218-20P, C2, Jan M151.
TM 10-269, C7, Mar Canvas and webbing repair.
TM 10-500-12, C1, Mar Rigging Typical Supply Loads.
TM 10-500-79, Jan Rigging Airfield Repair Kit.
TM 10-3930-603-12, C1, Apr Med Wheel Tractor.
TM 10-3930-611-12, Feb Elec Forklift.
TM 10-3930-619-12, Jan 2000-lb MHE 207.
TM 10-4320-201-25P, C1, Apr Petroleum Distr Equip.
TM 10-4500-200-13, Dec Heaters, Space, Portable, Immersion.
TM 10-4520-201-20, C3, Mar Heaters: 250,000 BTU.
TM 10-4520-201-20P, Jan Heaters: 250,000 BTU.
TM 10-4930-204-15, C2, Apr Petroleum Distr Equip.
TM 10-8340-207-14, C1, Apr Tents
TM 10-8340-219-24P, Feb Maintenance Tents.
TM 11-5410-214-15P, Jan Elec Equip Shelter S-250/G.
TM 11-6625-1634-15, Jan Radio Test Set AN/URM-101B.
TM 11-6625-1703-15, Feb Oscilloscope AN/USM-281A.
TM 11-6720-248-12, Jan. Camera KS-19A4.
TM 55-1510-204-CL/5, Jan OV-1.
TM 55-1510-204-20PMD/1, Feb OV-1.
TM 55-1510-204-20PMI/1 Feb OV-1D.
TM 55-1510-209-CL/1, Dec U-21.
TM 55-1510-209-CL/4 Dec U-21.
TM 55-1520-221-PMP, Jan AH-1G.

ESC'S

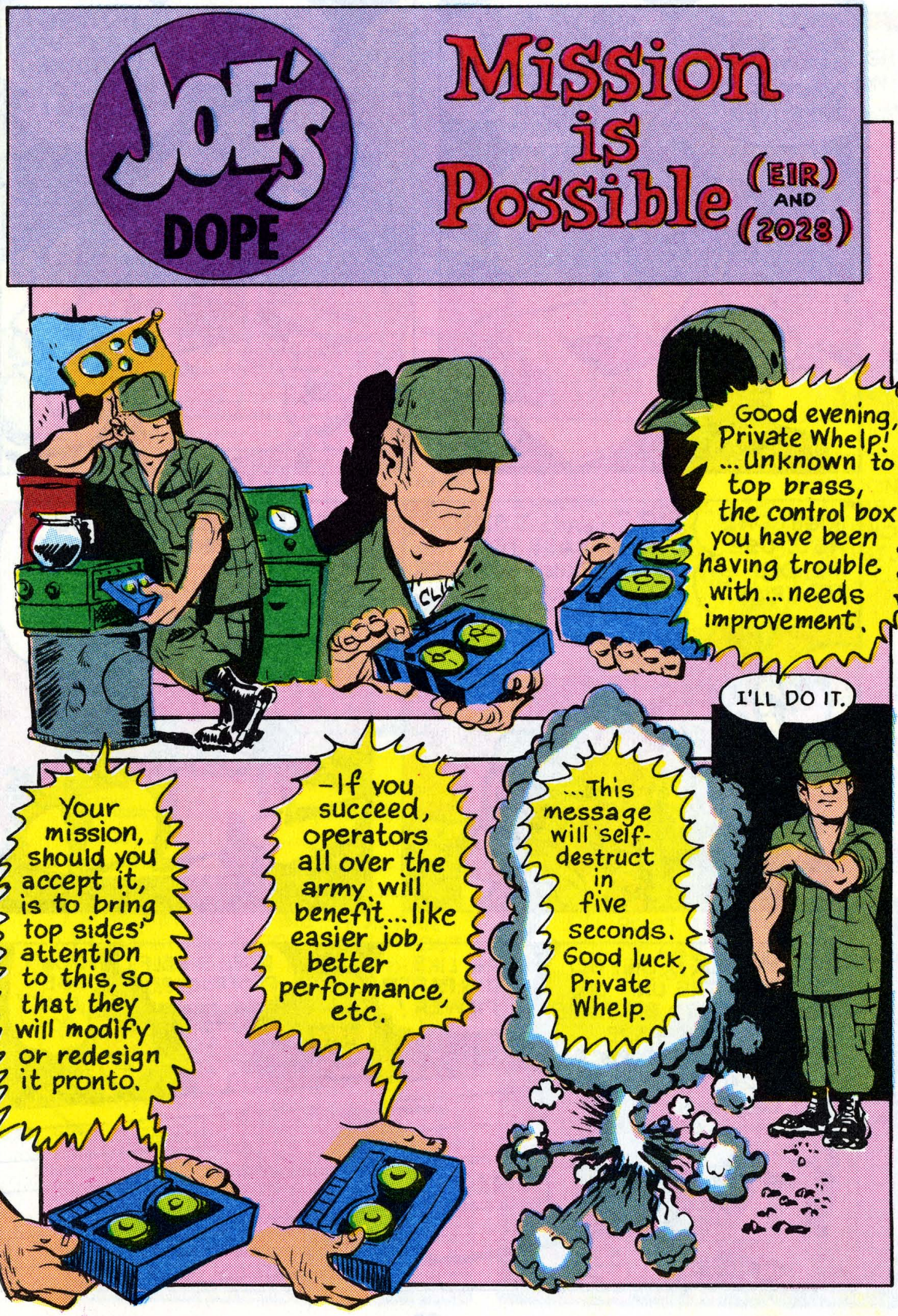
TM 9-1015-215-ESC, Jan 4.2-In Mortar.
TM 9-2320-242-ESC, Feb M 561 1¼-ton truck.
TM 9-2320-260-ESC, Feb M813 5-ton truck.
TM 11-5815-206 ESC, Feb Teletypewriters.
TM 11-5815-238-ESC, Feb Teletypewriters AN/GGC-3, AN/GGC-3A Teletypewriter TT-76/GGC, TT-76A/GGC, TT-76B/GGC, TT-76C/GGC.
TM 11-5855-217-ESC, Feb Searchlight Set.

MODIFICATION WORK ORDERS

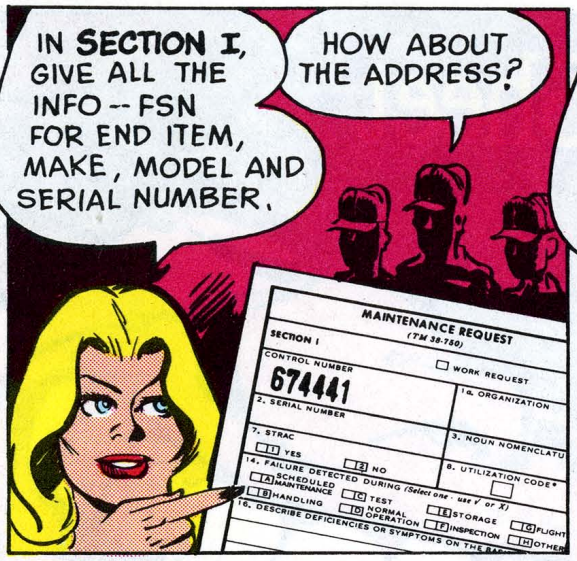
9-1190-233-20/4, Mar Pershing.
9-1240-293-40/3, Mar M107, M110 Arty
9-1240-293-40/3, Mar Scope Mount M137
9-1240-324-30/1, Apr How Towed 105-MM, M102.
9-1240-324-30/2, Apr How Towed 105-MM, M102.
9-1440-301-40/35, Mar Sergeant.
9-1450-500-30/9, Apr Hawk.
9-2300-224-30/11, C2, Apr M113 Carrier.
9-2300-224-30/24, C1, Apr M577 Carrier.
9-2300-224-30/26, C1, Apr M577 Carrier.
9-2300-224-30/27, C1, Apr M577 Carrier.
9-2300-391-40, Mar M107, M110 Arty; M578.
9-2330-212-30/11, Mar Nike-Herc.
9-2350-224-30/2, Mar M48A3 Tank.
9-2350-244-20/8, Apr M114/M114A1 axle shift retainer kit.
9-2350-244-20/10, Mar M 114/M114A1, grease fittings.
9-2350-244-30/12, Apr M114/M114A1 hatch cover latch.
9-4935-305-40/6, Mar Sergeant.
11-5810-214-45/12, Apr TSEC/KW-26 ( )
11-5810-214-45/13, Mar TSEC/KW-26C.
11-5810-225-35/3, Mar TSEC/KY-3.
11-5810-244-45/4, Mar TSEC/KY-28.
11-5810-245-45/2, Mar TSEC/KY-38.
11-5810-245-45/3, Apr TSEC/KY-38.
11-5810-245-45/4, Mar TSEC/KY-38.
55-1510-202-30/7, Mar 0-1.
55-1520-210-30/13, C1, Mar UH-1D.
55-1520-210-40/3, Apr OH-1D.
55-1520-211-30/30, C1, Mar UH-1C.
55-1520-214-30/30, Mar OH-6.
55-1520-221-20/9, Apr AH-1G.
55-1520-221-30/17, C1, Mar AH-1G.
55-1520-227-30/22, Mar CH-47 B,C.

MISCELLANEOUS

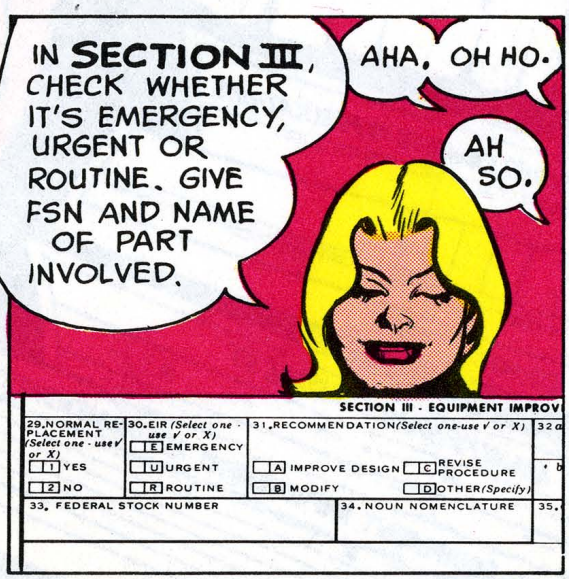
AR 750-19, Apr Maint Floats.
DA Cir 750-33, Apr Equip Operationally Ready Standards.
DA Label 80, Jan Calibration Form.
DA Label 132 Warning — Do Not Start while Radio Is on (Prescribed by SB 11-624).
FM 44-100, Feb Vulcan.
LO-5-2420-213-12-1-3, Dec Scrapers.
LO 5-2420-213-12-2, Dec Scrapers.
LO 5-3895-334-12, Dec Bituminous Heaters.
TB 55-1500-205-20/1, Apr OH-13.
TB 55-1500-311-25, Mar All Aircraft Test Flts.
TB 55-1510-204-30/6, Mar OV-1.
TB 55-1510-204-30/7, C1, Apr OV-1.
TB 55-1520-227-20/9, Mar CH-47.
TB 55-2620-202-15, Mar All Aircraft Tire Repair and Retreading.

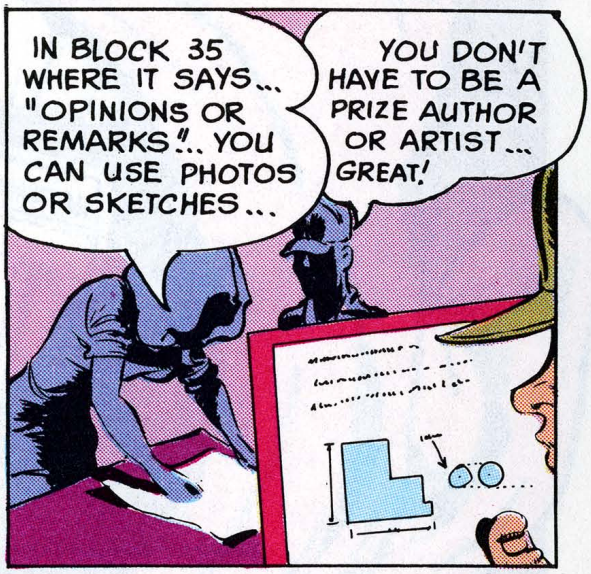

Joe's DOPE
Mission is Possible (EIR) AND (2028)
Good evening, Private Whelp! ...Unknown to top brass, the control box you have been having trouble with ... needs improvement.
CLICK
I'LL DO IT.
...This message will self-destruct in five seconds. Good luck, Private Whelp.
-If you succeed, operators all over the army will benefit... like easier job, better performance, etc.
Your mission, should you accept it, is to bring top sides' attention to this, so that they will modify or redesign it pronto.

OKAY TEAM, WE'RE GONNA GET THIS CONTROL BOX IMPROVED!
AND WE'RE GONNA DO IT BY REACHING RIGHT UP TO THE HEAD SHED.
MISSION'S IMPOSSIBLE!
NOT SO! WE'VE GOT A PIPELINE RIGHT TO THE TOP!
RIGHT ON!! WE'LL USE THE OLD EIR TRICK!!
EIR? HAH! I SENT ONE UP LAST YEAR ON A STICKING HOWITZER LANYARD ARM... NOTHIN' HAPPENED FAR AS I CAN SEE!!
COULD BE YOU HAD A RARE OR ISOLATED MALFUNCTION OR YOUR EIR WAS GARBLED...
YOU HAVE TO KNOW HOW TO USE THE EIRS.
EIR'S WORK!! THEY GO RIGHT FROM THE UNIT OR THE OPERATOR TO THE PLACE WHERE DECISIONS ARE MADE... NOTHING STOPS A DA FORM 2407! SEE TM 38-750, PARA 3-7. 4.1 FOR INFO ON FILLING IT OUT.
MAN, LIKE THAT'S PAPER POWER!
DOES IT SELF-DESTRUCT??
DON'T BE DINKY DOW!
MAINTENANCE REQUEST
(TM 38-750)
* See reverse of file copy for codes and additional data.
PAGE NO.
NO. OF
SECTION I
WORK REQUEST
MWO
EIR
CONTROL NUMBER
674441
1a. ORGANIZATION
b. LOCATION
2. SERIAL NUMBER
3. NOUN NOMENCLATURE
4. LINE NUMBER
5. MODEL
7. STRAC
8. UTILIZATION CODE*
9. SELECTED ITEM
1 YES
2 NO
DA 2407


IN SECTION I, GIVE ALL THE INFO -- FSN FOR END ITEM, MAKE, MODEL AND SERIAL NUMBER.
HOW ABOUT THE ADDRESS?
MAINTENANCE REQUEST
(TM 38-750)
SECTION I
CONTROL NUMBER
674441
WORK REQUEST
2. SERIAL NUMBER
11a. ORGANIZATION
7. STRAC
YES
NO
9. NOUN NOMENCLATU
14. FAILURE DETECTED DURING (Select one - use √ or X)
SCHEDULED MAINTENANCE
TEST
8. UTILIZATION CODE*
HANDLING
NORMAL OPERATION
STORAGE
FLIGHT
INSPECTION
OTHER
16. DESCRIBE DEFICIENCIES OR SYMPTOMS ON THE BA

THAT'S IMPORTANT! IF YOU EXPECT TO GET A FEED BACK YOU'VE GOT TO BE SURE YOUR NAME AND UNIT'S ADDRESS AND PHONE NUMBER ARE ON IT!
RIGHT ON!

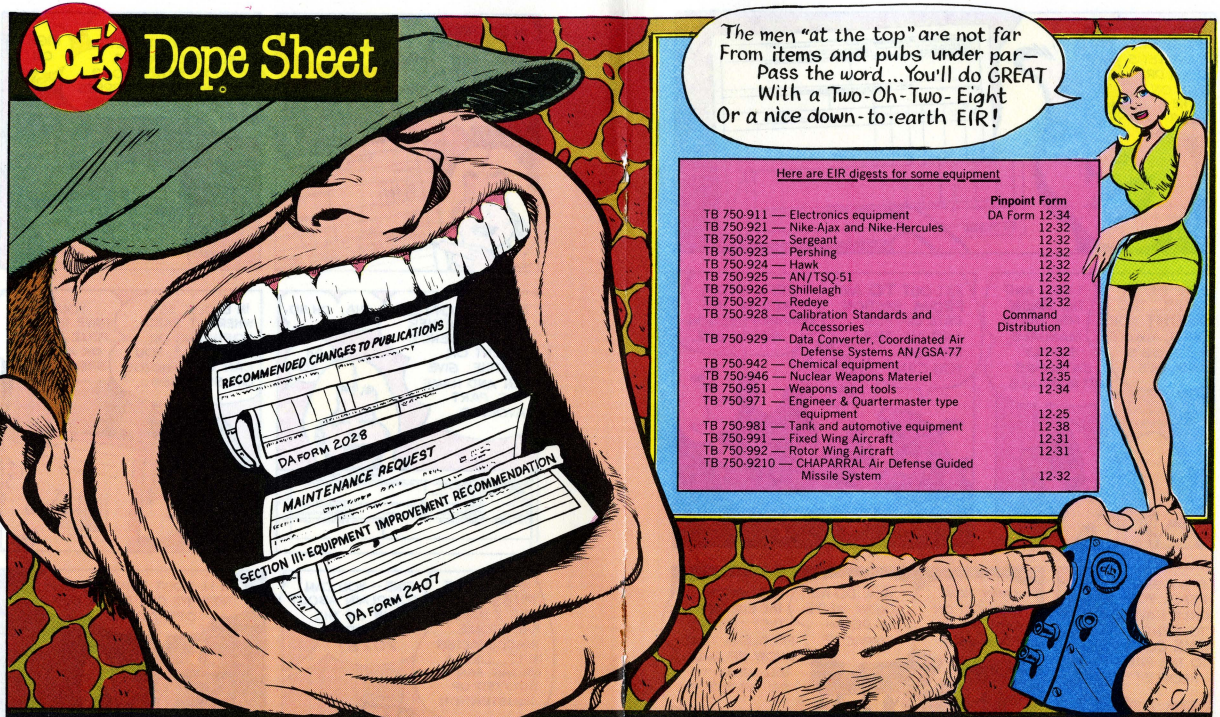

IN SECTION III, CHECK WHETHER IT'S EMERGENCY, URGENT OR ROUTINE. GIVE FSN AND NAME OF PART INVOLVED.
AHA, OH HO.
AH SO.
SECTION III - EQUIPMENT IMPROV
29. NORMAL REPLACEMENT (Select one - use √ or X)
YES
NO
30. EIR (Select one - use √ or X)
EMERGENCY
URGENT
ROUTINE
31. RECOMMENDATION (Select one-use √ or X)
IMPROVE DESIGN
REVISE PROCEDURE
MODIFY
OTHER (Specify)
33. FEDERAL STOCK NUMBER
34. NOUN NOMENCLATURE


IN BLOCK 35 WHERE IT SAYS... "OPINIONS OR REMARKS"... YOU CAN USE PHOTOS OR SKETCHES...
YOU DON'T HAVE TO BE A PRIZE AUTHOR OR ARTIST... GREAT!

HOW ABOUT PUBS... THE ONE I HAVE HAS SOME INACCURACIES IN IT... LIKE, A WRONG FSN AND BOLYXED UP ILLUSTRATION.
FINE -- YOU CAN COMPLAIN ABOUT A PUB ON THE DA FORM 2028!

I'LL POST THIS PIN-UP— THEN WE CAN BEGIN OUR OPERATION!

IF YOU WANT TO DISPLAY THIS CENTERPIECE ON YOUR BULLET

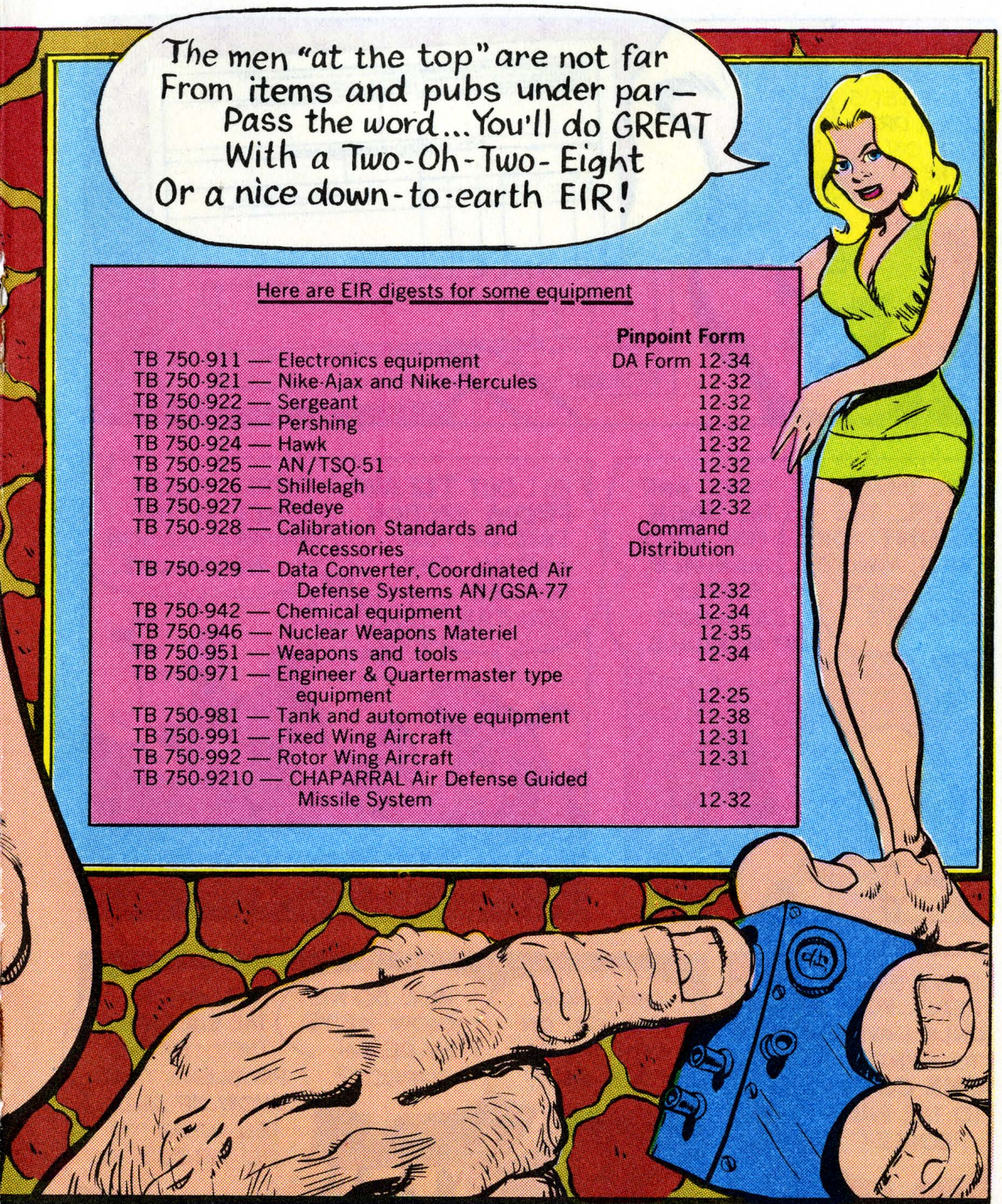


Here are EIR digests for some equipment

	Pinpoint Form
TB 750-911 — Electronics equipment	DA Form 12.34
TB 750-921 — Nike-Ajax and Nike-Hercules	12.32
TB 750-922 — Sergeant	12.32
TB 750-923 — Pershing	12.32
TB 750-924 — Hawk	12.32
TB 750-925 — AN/TSQ-51	12.32
TB 750-926 — Shillelagh	12.32
TB 750-927 — Redeye	12.32
TB 750-928 — Calibration Standards and Accessories	Command Distribution
TB 750-929 — Data Converter, Coordinated Air Defense Systems AN/GSA-77	12.32
TB 750-942 — Chemical equipment	12.34
TB 750-946 — Nuclear Weapons Materiel	12.35
TB 750-951 — Weapons and tools	12.34
TB 750-971 — Engineer & Quartermaster type equipment	12.25
TB 750-981 — Tank and automotive equipment	12.38
TB 750-991 — Fixed Wing Aircraft	12.31
TB 750-992 — Rotor Wing Aircraft	12.31
TB 750-9210 — CHAPARRAL Air Defense Guided Missile System	12.32

WE HAVE THE WORLD'S BEST EQUIPMENT...*Take care of it*

IF YOU WANT TO DISPLAY THIS CENTERPIECE ON YOUR BULLETIN BOARD, OPEN STAPLES, LIFT IT OUT AND PIN IT UP.

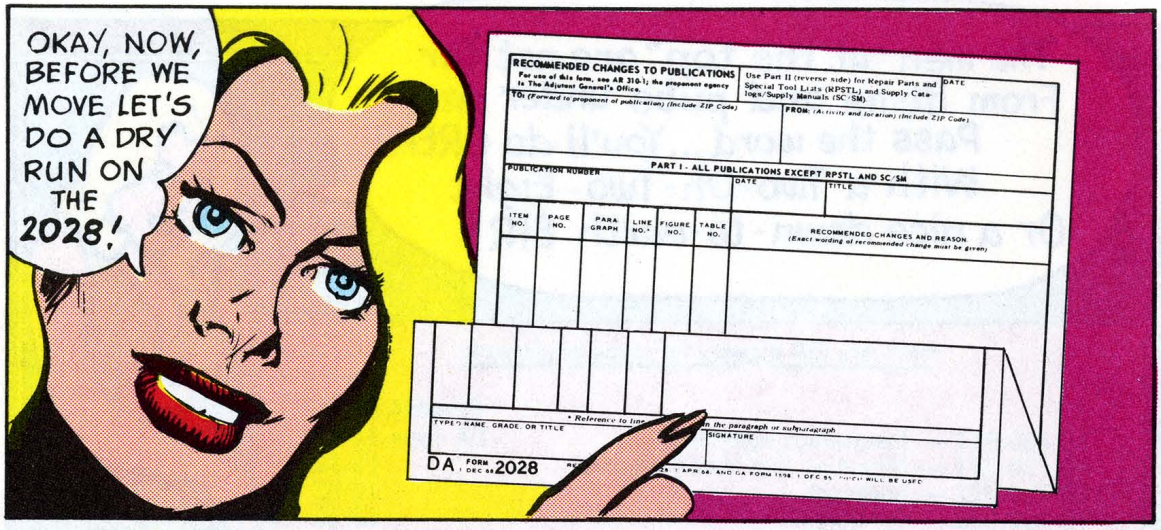


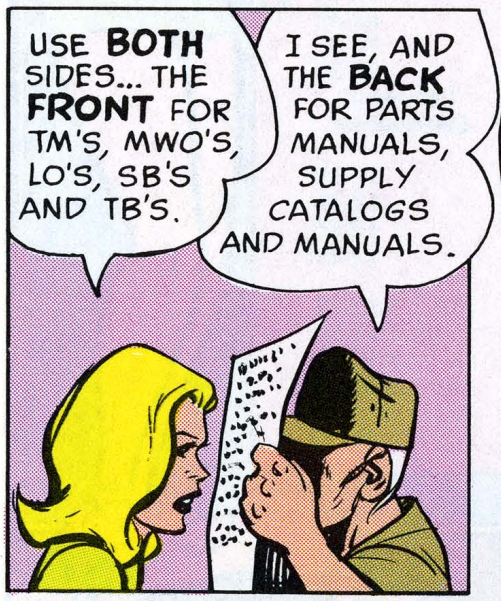
Here are EIR digests for some equipment

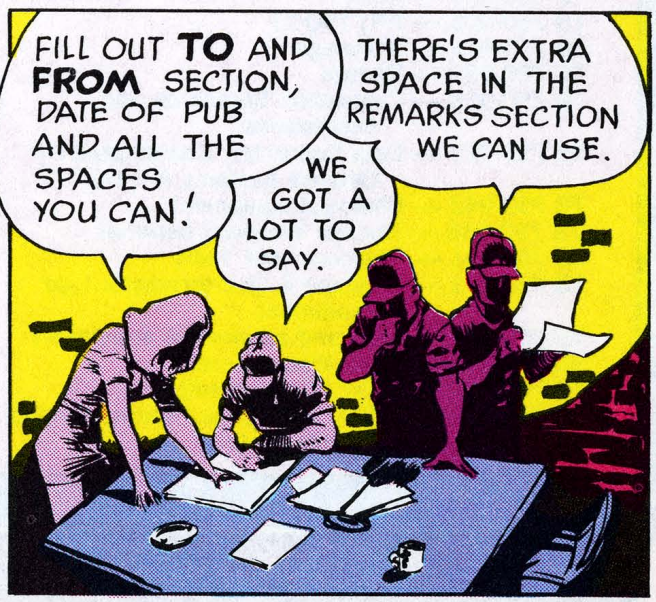
	Pinpoint Form
TB 750-911 — Electronics equipment	DA Form 12-34
TB 750-921 — Nike-Ajax and Nike-Hercules	12-32
TB 750-922 — Sergeant	12-32
TB 750-923 — Pershing	12-32
TB 750-924 — Hawk	12-32
TB 750-925 — AN/TSQ-51	12-32
TB 750-926 — Shillelagh	12-32
TB 750-927 — Redeye	12-32
TB 750-928 — Calibration Standards and Accessories	Command Distribution
TB 750-929 — Data Converter, Coordinated Air Defense Systems AN/GSA-77	12-32
TB 750-942 — Chemical equipment	12-34
TB 750-946 — Nuclear Weapons Materiel	12-35
TB 750-951 — Weapons and tools	12-34
TB 750-971 — Engineer & Quartermaster type equipment	12-25
TB 750-981 — Tank and automotive equipment	12-38
TB 750-991 — Fixed Wing Aircraft	12-31
TB 750-992 — Rotor Wing Aircraft	12-31
TB 750-9210 — CHAPARRAL Air Defense Guided Missile System	12-32

UIPMENT ... *Take care of it*

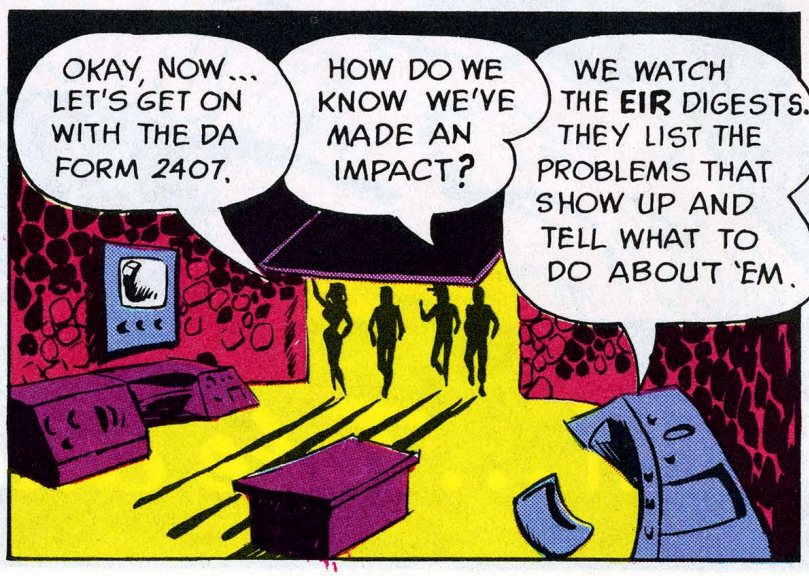
TIN BOARD, OPEN STAPLES, LIFT IT OUT AND PIN IT UP.

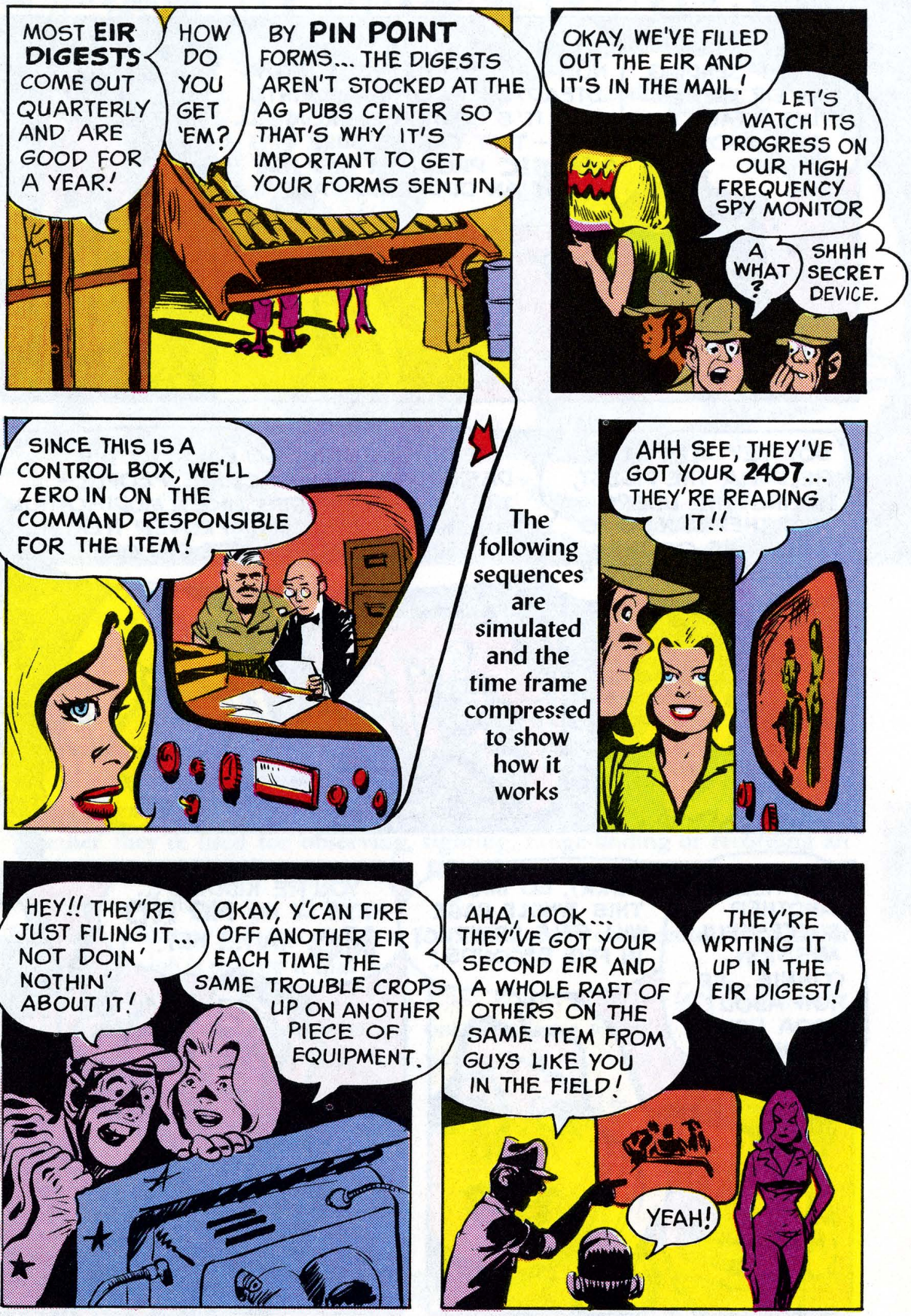

OKAY, NOW, BEFORE WE MOVE LET'S DO A DRY RUN ON THE 2028!
RECOMMENDED CHANGES TO PUBLICATIONS
For use of this form, see AR 310-1; the proponent agency is The Adjutant General's Office.
Use Part II (reverse side) for Repair Parts and Special Tool Lists (RPSTL) and Supply Catalogs/Supply Manuals (SC/SM).
DATE
TO: (Forward to proponent of publication) (Include ZIP Code)
FROM: (Activity and location) (Include ZIP Code)
PART I - ALL PUBLICATIONS EXCEPT RPSTL AND SC/SM
PUBLICATION NUMBER
DATE
TITLE
ITEM NO.
PAGE NO.
PARA-GRAPH
LINE NO.*
FIGURE NO.
TABLE NO.
RECOMMENDED CHANGES AND REASON
(Exact wording of recommended change must be given)
* Reference to line
in the paragraph or subparagraph
TYPED NAME, GRADE OR TITLE
SIGNATURE
DA FORM 2028


USE BOTH SIDES... THE FRONT FOR TM'S, MWO'S, LO'S, SB'S AND TB'S.
I SEE, AND THE BACK FOR PARTS MANUALS, SUPPLY CATALOGS AND MANUALS.

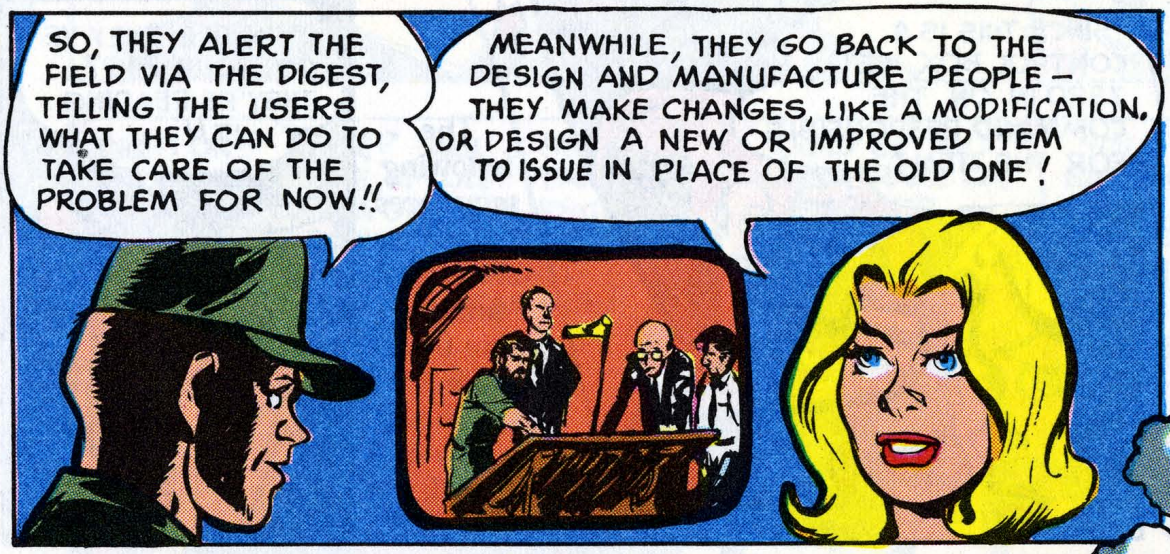

FILL OUT TO AND FROM SECTION, DATE OF PUB AND ALL THE SPACES YOU CAN!
WE GOT A LOT TO SAY.
THERE'S EXTRA SPACE IN THE REMARKS SECTION WE CAN USE.

IT'S A SIMPLE DEAL... YOU ONLY HAVE TO SEND ONE COPY TO THE PUBS PEOPLE!


OKAY, NOW... LET'S GET ON WITH THE DA FORM 2407.
HOW DO WE KNOW WE'VE MADE AN IMPACT?
WE WATCH THE EIR DIGESTS. THEY LIST THE PROBLEMS THAT SHOW UP AND TELL WHAT TO DO ABOUT 'EM.


MOST EIR DIGESTS COME OUT QUARTERLY AND ARE GOOD FOR A YEAR!
HOW DO YOU GET 'EM?
BY PIN POINT FORMS... THE DIGESTS AREN'T STOCKED AT THE AG PUBS CENTER SO THAT'S WHY IT'S IMPORTANT TO GET YOUR FORMS SENT IN.
OKAY, WE'VE FILLED OUT THE EIR AND IT'S IN THE MAIL!
LET'S WATCH ITS PROGRESS ON OUR HIGH FREQUENCY SPY MONITOR
A WHAT?
SHHH SECRET DEVICE.
SINCE THIS IS A CONTROL BOX, WE'LL ZERO IN ON THE COMMAND RESPONSIBLE FOR THE ITEM!
The following sequences are simulated and the time frame compressed to show how it works
AHH SEE, THEY'VE GOT YOUR 2407... THEY'RE READING IT!!
HEY!! THEY'RE JUST FILING IT... NOT DOIN' NOTHIN' ABOUT IT!
OKAY, Y'CAN FIRE OFF ANOTHER EIR EACH TIME THE SAME TROUBLE CROPS UP ON ANOTHER PIECE OF EQUIPMENT.
AHA, LOOK... THEY'VE GOT YOUR SECOND EIR AND A WHOLE RAFT OF OTHERS ON THE SAME ITEM FROM GUYS LIKE YOU IN THE FIELD!
THEY'RE WRITING IT UP IN THE EIR DIGEST!
YEAH!

I GET IT NOW! I KEEP SENDING AN EIR EVERY TIME A FAULTY ITEM SHOWS UP.
RIGHT... THE POINT IS THAT NOW THAT THEY'RE GETTING A STEADY FLOW OF COMPLAINTS AND IT'S COMING IN FROM ALL OVER—THEY CAN BE SURE IT'S A BASIC PROBLEM AND NOT JUST AN ODD-BALL CASE!

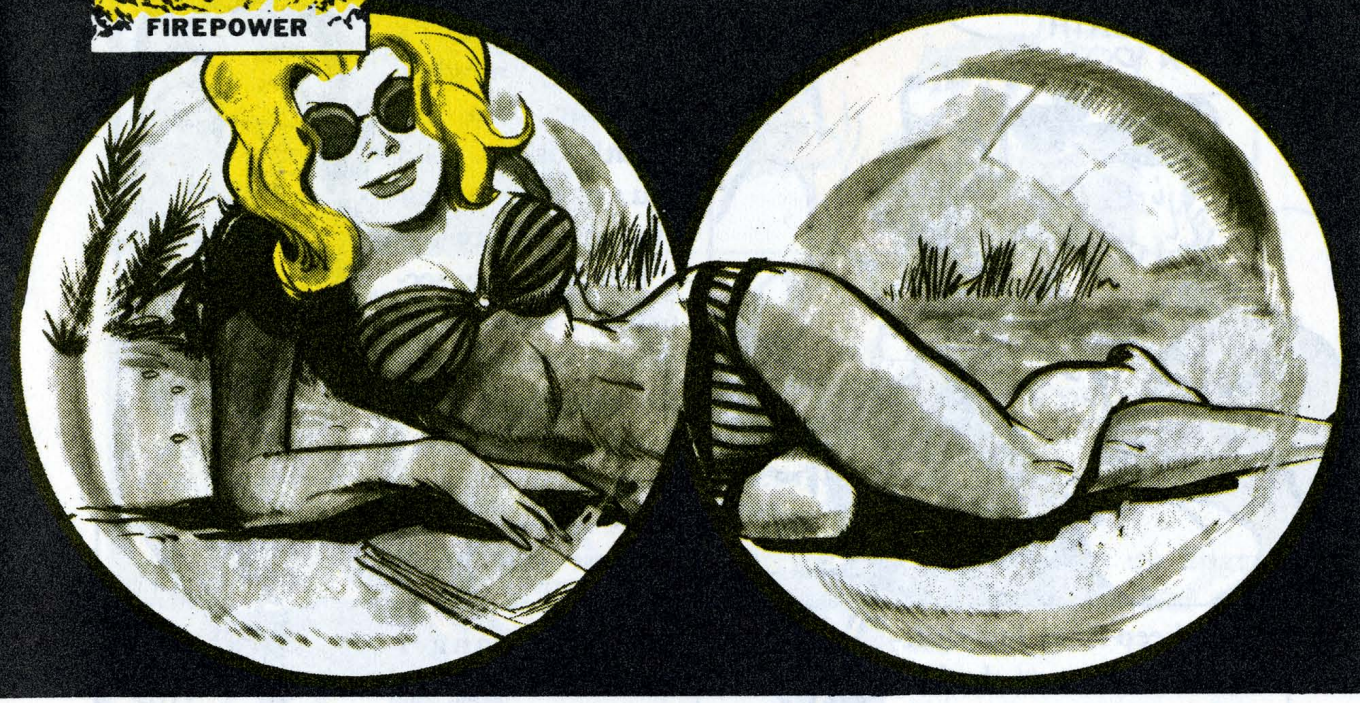

SO, THEY ALERT THE FIELD VIA THE DIGEST, TELLING THE USERS WHAT THEY CAN DO TO TAKE CARE OF THE PROBLEM FOR NOW!!
MEANWHILE, THEY GO BACK TO THE DESIGN AND MANUFACTURE PEOPLE— THEY MAKE CHANGES, LIKE A MODIFICATION, OR DESIGN A NEW OR IMPROVED ITEM TO ISSUE IN PLACE OF THE OLD ONE!

AH, WELL— ANOTHER SUCCESSFUL MISSION, CONNIE... ER— HOW ABOUT A SODA DOWN AT THE NCO CLUB?
SORRY, NO TIME, THIS WHOLE PAGE WILL SELF-DESTRUCT IN FIVE SECONDS!
YOU'RE KIDDING... HEY!! NO NO NO NO WAIT... HEY!

FIREPOWER

CLEAN, CLEAR, CURVACEOUS AND . . .

WITHOUT A SCRATCH



The night has a thousand—you've got only two.

Old Cyclops had only one, so he knew that he **had to take care of it.**

By now you should know that the subject is eyes—the orbs you use to ogle, the peepers you use to peep. **And their helpers.**

Good as your eyes are, they sometimes need help, especially for seeing long distance or in a blackout, for seeing little dangers before they turn into big ones or for drawing a bead on a target.

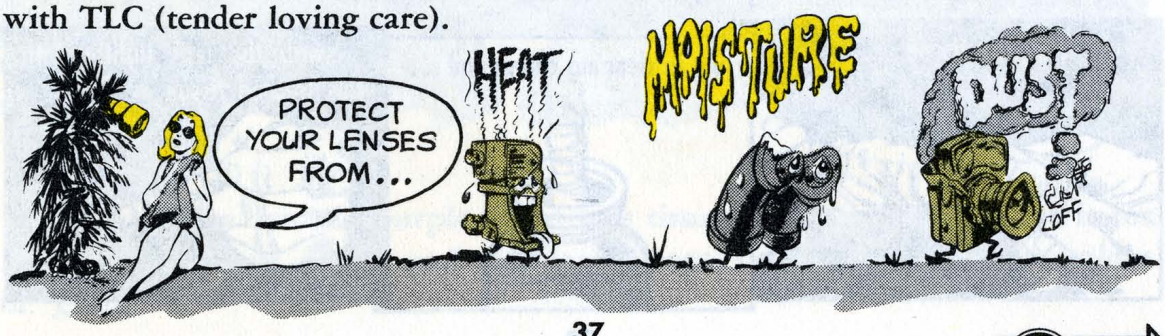
That's where optics come into the picture.

Whether they're used for observing, sighting, range-finding or recording an image on film, these optic helpers have one thing in common. They're almost always made of glass.

Each lens, prism or reflector comes to you clean, clear, curvaceous and without a scratch. Your job is to keep it that way.

It must be kept free of moisture, heat, dust, grime, grease—free of even the film of oil you leave as a fingerprint any time you lay a finger down.

These optics can't take any jars, jams, slams or bams. Tote 'em or touch 'em with TLC (tender loving care).



PS MORE

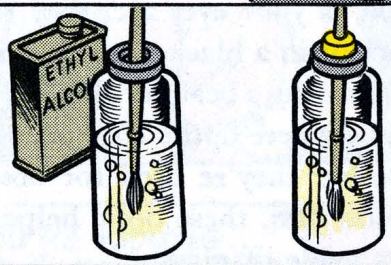
DUST WITH BREATH OR BRUSH

If the weather's not chilly, a whiff of your own hot breath is a good dust remover (though it may fog a lens for a few seconds). If a light breath won't budge the dust, keep your hands and handkerchief away.

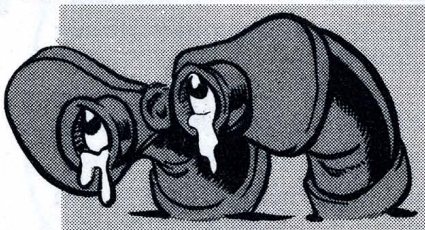
To keep from just shifting dust about on the lens surface, rap the handle against a hard surface now and then to shake those mini-sized gravel free.

Dust can grind or scratch a lens—and the danger doubles for the coated type. So **lift** dust off with a light touch of an artist's camel-hair brush.

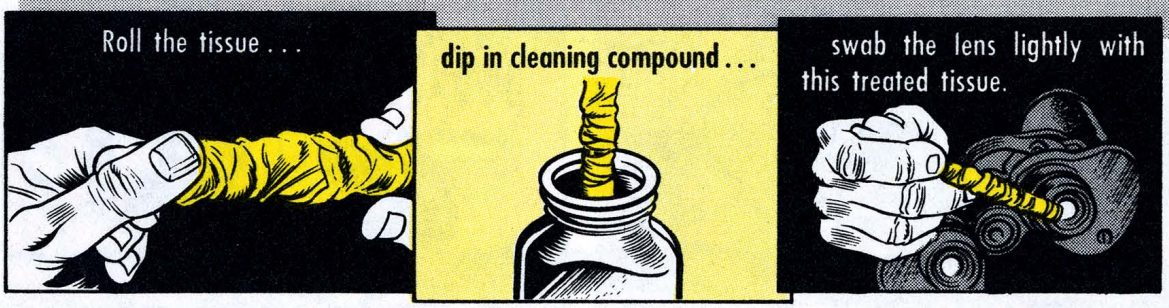
After a cleanup job, wash the brush in ethyl alcohol. When it's real grimy, push the brush handle through a cork stopper and soak its hair to free the grime—but dry it before use again on a lens.



FOR DE-GREASING



Just a little dab of grease—even a greasy fingerprint—can do your lens in. To clean off a grease or oil smudge, use optical lens liquid cleaning compound, and lens tissue paper.



Then wipe the cleaner away with a double-folded tissue. It's folded twice so no oil from your finger tip can soak through to the lens. Rub in circles from the center outward. And change tissue any time there's a sign of grime on it. One grimy swipe can kill the lens.

In a pinch, ethyl alcohol can sub for cleaning compound—if you're careful. But easy on ol' Alky. On some older lenses if he sneaks over the edge he can eat away their cement.

Breath can help to clean up finger smudges—if they're light and the weather's not too cool.

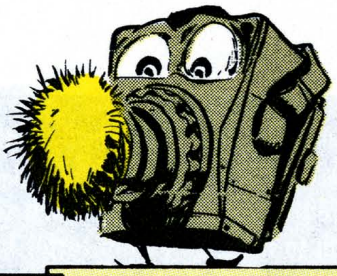
Take special care if the lens has a magnesium fluoride coating (that's the coating that gives the lens its bluish tint and cuts down light loss from reflections).

NO FANCY STUFF

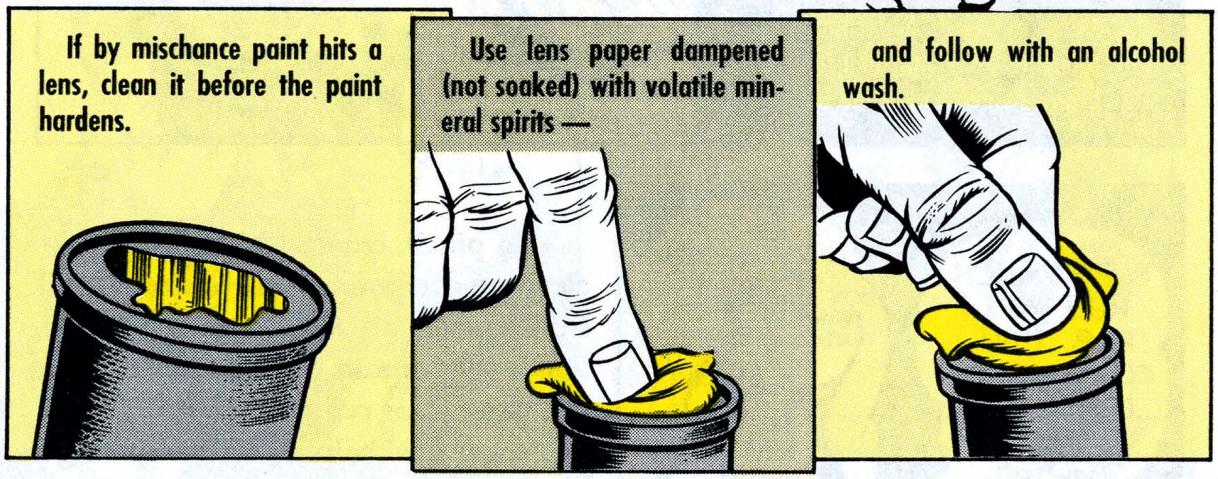
Don't let any sideshow barker sell you any extra-strength polishing liquids, pastes or silicones for cleaning lenses. Some may clean but they'll also fog or scratch while taking away grime.

You may run across a purple-tinted lens tissue in the field. Don't use it for lenses! It's silicone coated and can damage optics. Use it only for your plain ol' glass.

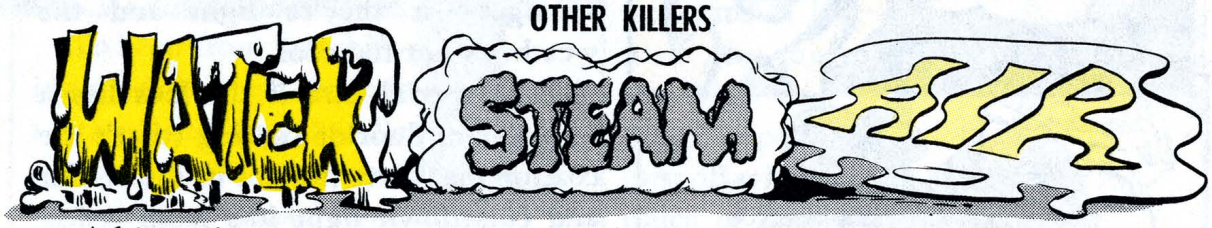
KEEP 'EM COVERED



The best lens PM is to keep it covered when not in use. That stops a lot of trouble in its tracks.

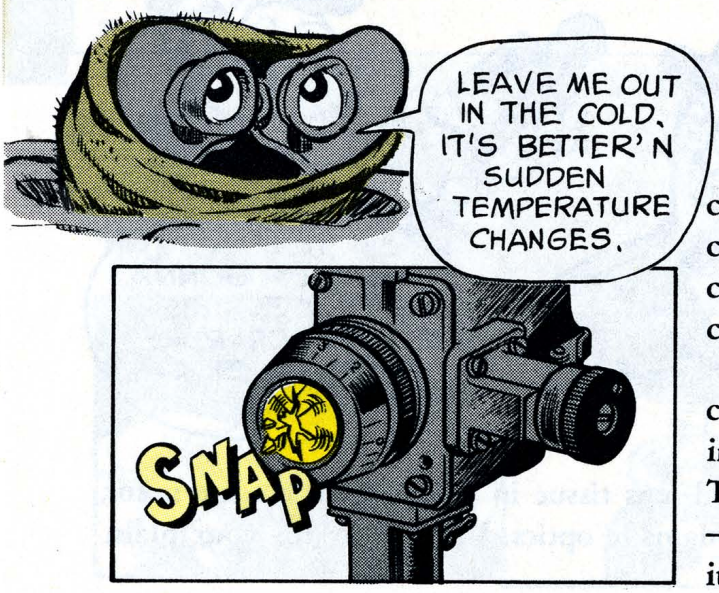


OTHER KILLERS



A blast of water, steam or air on an uncovered lens can kill it by forcing moisture into its innards or grime against its polished face. A scratched lens is scratched more ways than one.

And even though its job is to transmit light, too much light can kill a lens. A lens focuses light rays and builds up heat that can soften its cement — and crack the reticles (measuring lines) in sighting equipment. So never point a lens direct at the sun without a shade or filter.



LENSES IN A DEEPFREEZE

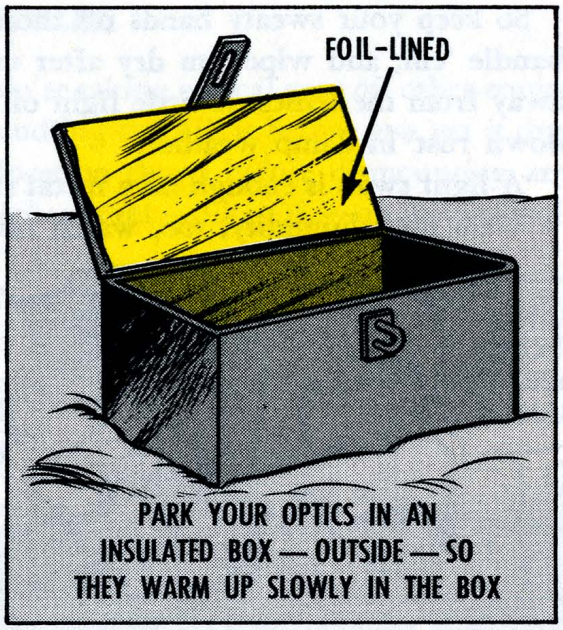
If you're using lenses in a cold country, your major hazard is not the cold — it's the sudden temperature change when you take 'em in out of the cold.

Cold glass in a warm room collects condensation. It even collects inside an instrument if warm air can reach it. This can rust metal parts of instruments — frost up a lens, or even crack it, when it's taken back into the cold.

Warm up a frozen instrument too fast by a hot stove and expansion of metal parts can crack it apart at the seams.

One way to dodge such damage is to box optical equipment outside when you go in. You can use a box with a tight-fitted lid and lined with a continuous piece of heat-conducting material, like aluminum foil.

Park your optics in this box—outside—away from sudden temperature changes. Then take 'em inside in the box and they'll warm up slow without frosting.

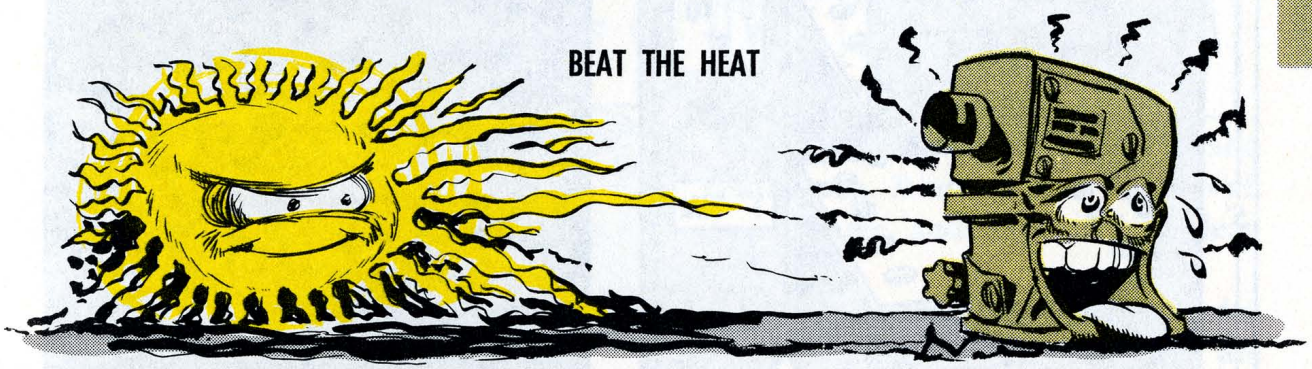


Two other points to keep in mind:

Don't try using your own hot breath to clean a lens in freezing weather. Use a bit of alcohol, instead, but use with care. Moisture in your breath will fog the lens—maybe frost it. Fact is, better turn your head sidewise when you **look** at a lens in the cold.

Check equipment lube instructions for the right cold-weather lubricant. Lube that pours sluggish in the cold can turn moving parts sluggish or even bring 'em to a standstill in extreme cold.

BEAT THE HEAT



When it's frying-pan hot, but dry, there are few big problems with optical equipment. (Hold down on the oil, though—it'll just collect sand and dust).

But add humidity to the recipe and you've got trouble.

Sweat flows freely and drips and squishes. Sweat's got acid, and acid brings corrosion and rust if it gets on metal parts.

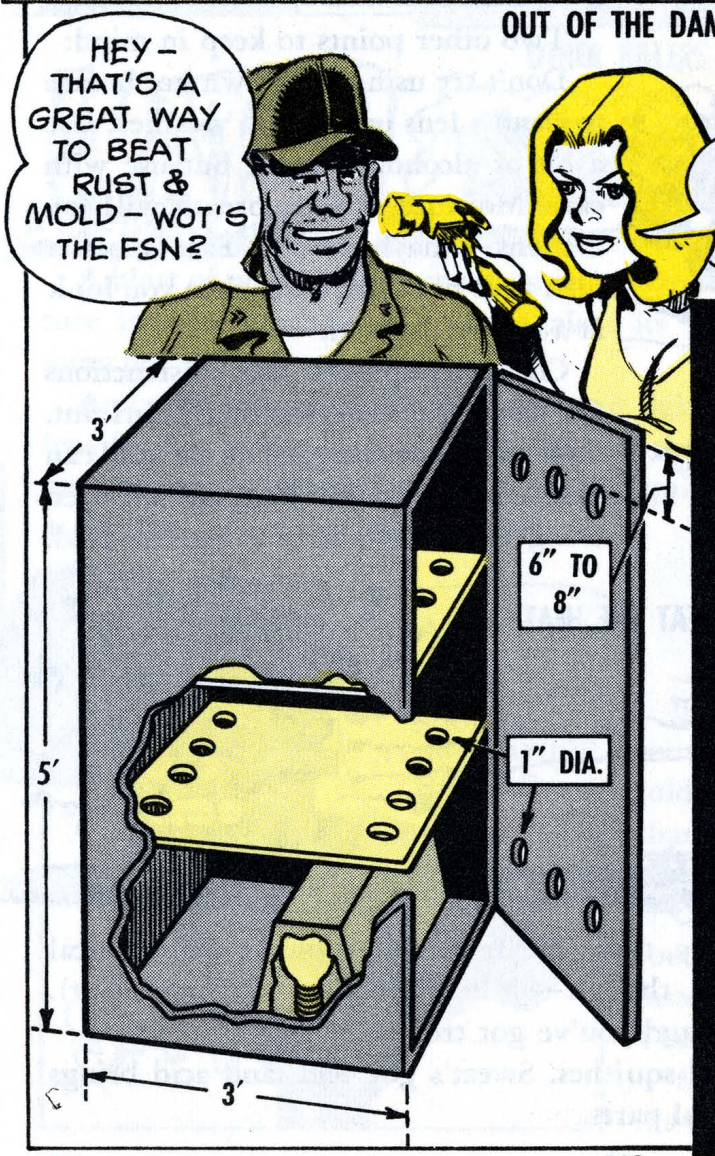
PS MORE

So keep your sweaty hands off those instruments except when you need to handle 'em, and wipe 'em dry after use—making sure you keep that wiper away from the lenses. A little light oil on bare metal, screws and pins can cut down rust in damp weather.

A light swab is enough on a metal surface.

With high humidity, too, watch fungi (mold) in every damp spot.

OUT OF THE DAMP



DRY LOCKER

Drill three 1-in holes 6 to 8 inches from top and bottom of the cabinet. Drill 'em on either the front or back side.

OK . . . now build two shelves, each with eight 1-in holes, and put 'em in the cabinet so the cabinet is "cut" in thirds.

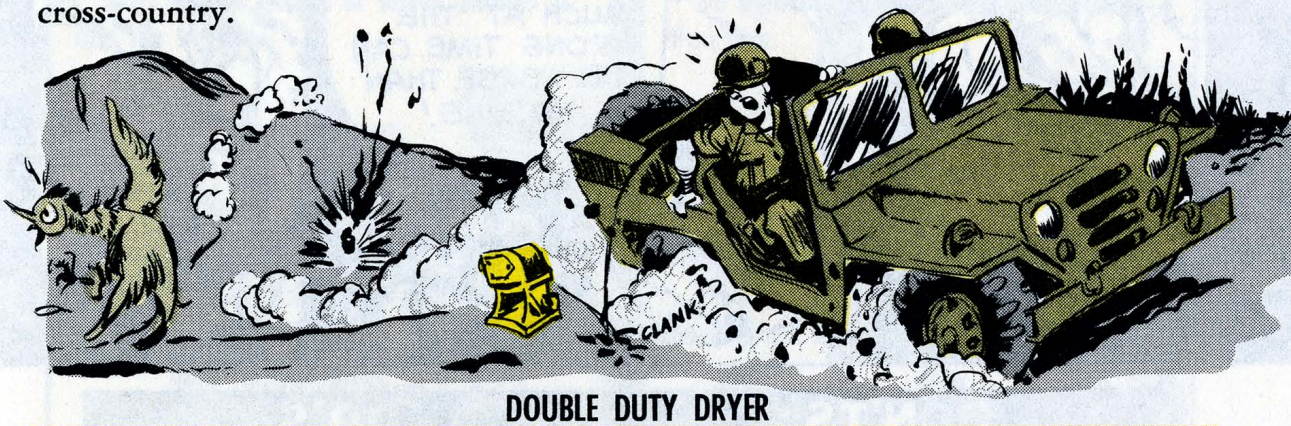
The deal that turns the cabinet into a drylocker is a light bulb that you put on the bottom of the cabinet. A 25-watt bulb should do the trick, but you may need a bigger one in the tropics. Put a shield, like aluminum foil, around the bulb as protection against a possible fire.

The drylocker works like so: Air comes through the holes at the bottom of the cabinet. It is warmed as it passes the bulb . . . and takes the dampness with it on out the holes at the top. 'Course, you don't want to let heat build up in the cabinet 'cause it might damage the instruments and melt the lubes.

HANDLE WITH CARE

Careful all the way, though, when you're taking optical gear off other equipment to stow it in a dry locker. Rough handling can kill it before you get it dry. And check your MAC (maintenance allocation chart) before dismounting any equipment. You may need help from a higher level — like DS — or special tools to do it.

If you're moving cross-country on rough terrain where optical gear is not needed, you can guard against damage by putting it in carrying cases or in shielded stowage. Some guys tote real valuable sights in their laps as they ride cross-country.

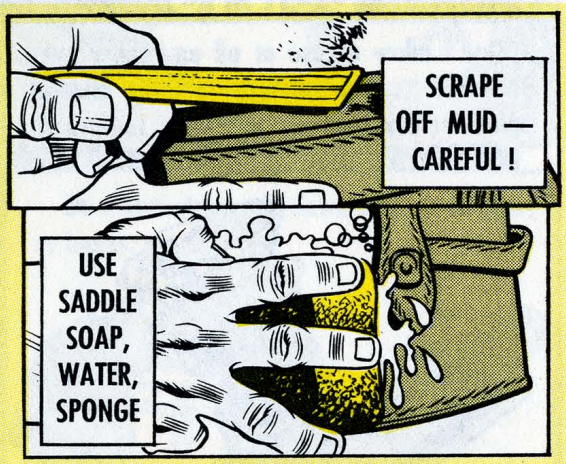


DOUBLE DUTY DRYER

Fact is, if you keep the heat down and build 'er big enough, a dry locker can also be used to take the dampness out of leather instrument carrying cases.

But watch that heat. Overheated leather may grow brittle and crack.

Remember to clean those carrying cases now and then. Use a sliver of wood to clean corners — a knife or glass may cut the leather.



Wash away grime with a sponge and saddle soap. Rinse at least twice with warm water, and wipe with a clean cloth.

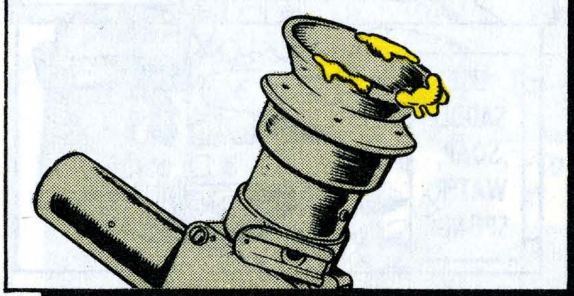
Dry in the shade or your warm dry locker. Sun and sweltering heat are hard on leather.

After drying, put back the washed-out oil. Moisten a cloth with neat's-foot oil and rub-wipe-rub until the leather shines.

P.S MORE

DON'TS

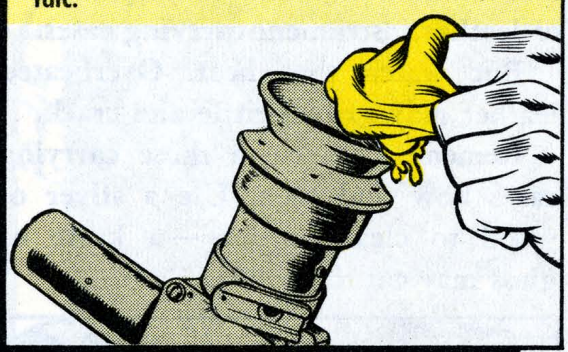
Don't allow grease or oil on rubber eyeshields . . . and don't use volatile mineral spirits or dry cleaning solvent to remove it.



Don't handle rubber eyeshields rough in the cold. Cold rubber gets brittle and breaks in extreme cold.

DO'S

Do clean the eyeshields with warm soapy water, rinse dry . . . then dust 'em lightly with talc.



Do handle those eyeshields with care when the mercury dives below zero.

DON'TS

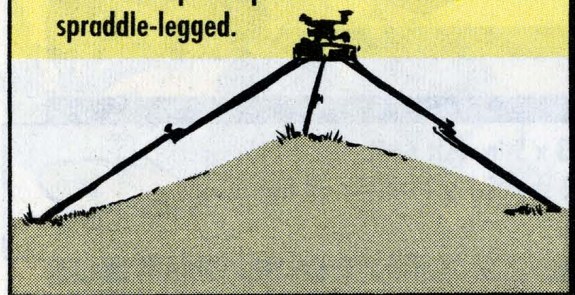
Don't strong-arm knobs, focusing nuts or hinges.

Don't tighten clamps or screws enough to foul the threads.

Don't take anything apart just to see why it ticks.

Don't let binoculars, cameras or instruments flap slam-bang.

Don't set up a tripod spraddle-legged.



DO'S

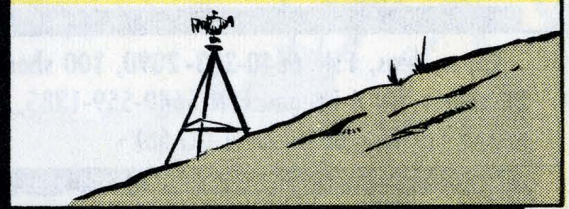
Do turn knobs easy — up to the marked limits. Use no more force than needed.

Do tighten clamps and screws till snug — then stop.

Do what the MAC says you'll do. If more's needed, ask support.

Do adjust straps, tie down or stow in cases or boxes.

Do spread legs evenly on the level. On slopes, put two legs downhill with feet in the ground. Keep extension clamps tight.



PS MORE

YOUR HANDS, EYES AND KNOW-HOW ARE MOST IMPORTANT IN KEEPING THOSE OPTICAL HELPERS ON THE JOB. BUT SOME CLEANING AND CARE ITEMS ARE NEEDED, TOO. HERE'S A LIST THAT MAY BE USEFUL:

CLEANING AND CARE ITEMS

Cleaning compound, optical lens, FSN 6850-227-1887, 1 qt;

Alcohol, denatured, FSN 6810-201-0906, 1 pt; and

Talc, technical, FSN 6810-270-9989, 1-lb can— all listed in Fed Cat C6800-IL (1 Jan 70).

Brush, artist's, camel hair, FSN 8020-264-3883;

Thinner, paint, mineral spirits, FSN 8010-290-4079, 1-qt can; and

Neat's-foot oil, FSN 8030-244-1031, 1-qt can; or FSN 8030-244-1033, 1-gal can — all listed in Fed Cat C8000-IL-A (Oct 69).

Paper, lens, FSN 6640-393-2090, 100 sheets 3 x 5-in, FSN 6640-597-6745, 50 sheets 4 x 6-in, and FSN 6640-559-1385, 100 sheets 7 x 11-in — all listed in Fed Cat C6630/40-IL (1 Oct 68).

Sponge, cellulose, FSN 7920-240-2555, 1¾ x 3⅝ x 5¾-in; and

Soap, saddle, FSN 7930-170-5467, 1-lb can — both listed in Fed Cat C7900-IL-A (1 Dec 69).

SOME SPECIAL CASES

Some instruments — like the M115 panoramic telescope, M137 telescope mount and M1 infinity collimator — are hermetically sealed.

These should **never** have moisture inside. If there's water inside 'em, they've got to be purged and charged with dry nitrogen.

Other instruments without nitrogen valves — like the M116 or M116C elbow telescopes — should be dried out if there's condensation moisture in 'em.

Expansion and contraction of optical elements in range finders keeps putting the coincidence reticle out of adjustment as the temperature changes. Adjust it often.

When binoculars and removable periscopes are supplied with protective cases, keep 'em there except when they're needed for immediate use.

PS END

THE ORGANIZATIONAL KIT'S AVAILABLE TO...

PURGE

"It's not the heat, it's the humidity" is an old saying that still fits around a lot of places these days. It's this same old humidity that causes the condensation which clouds up your fire-control instruments.

While you can't do anything about the humidity, you sure can do something about clearing up your own eyeball operations. Available for the asking is your very own organizational maintenance type purging kit.

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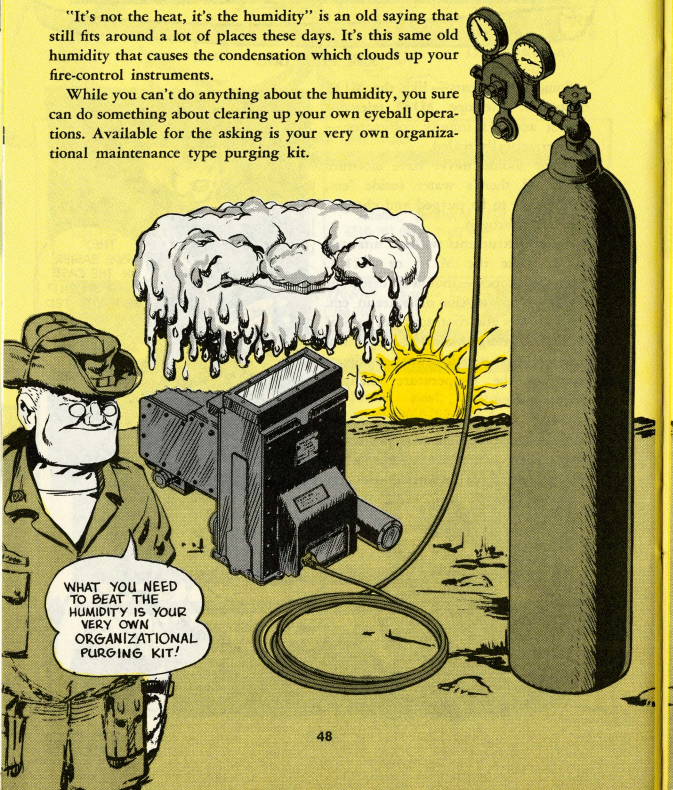

Everything you need to know about this kit is in 2 publications:

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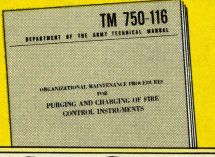
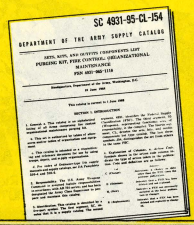
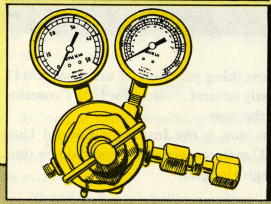

TM 750-116
DEPARTMENT OF THE ARMY TECHNICAL MANUAL
ORGANIZATIONAL MAINTENANCE PROCEDURES FOR PURGING AND CHARGING OF FIRE CONTROL INSTRUMENTS

This lists the kit's components.


SC 4931-95-CL-J54
DEPARTMENT OF THE ARMY SUPPLY CATALOG



Eventually, the current nitrogen filling regulator FSN 1240-558-0922 and adapter FSN 4931-508-5453 will be exhausted to a new regulator (to include the adapter) under FSN 6685-724-9744.

Since none of the TOE's have this purging kit as yet, you'll have to use the organizational mission spelled out in para 1 of your TOE as your reason for needing the kit. Send a letter request through command channels for an emergency authorization with the following info:

Line Item Number	(the temporary LIN is Z50585)
Nomenclature	(given by SC 4931-95-CL-J54)
Equipment requirement	(TM 750-116, para 2, requires purging at least every 90 days)
Personnel requirement	(your own organizational maintenance personnel are capable of operating and maintaining this kit)

YOURSELF

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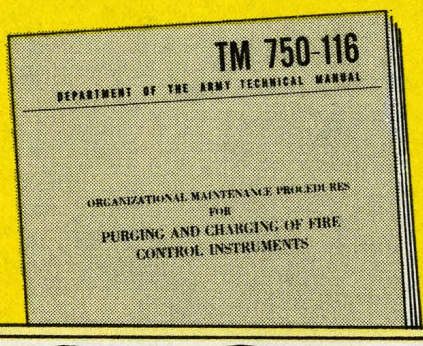
TM 750-116

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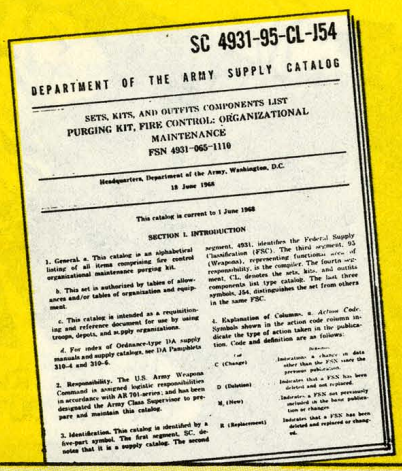

SC 4931-95-CL-J54

DEPARTMENT OF THE ARMY SUPPLY CATALOG

SETS, KITS, AND OUTFITS COMPONENTS LIST
PURGING KIT, FIRE CONTROL: ORGANIZATIONAL MAINTENANCE
FSN 4931-065-1110

Headquarters, Department of the Army, Washington, D.C.
18 June 1968

This catalog is current to 1 June 1968

SECTION I. INTRODUCTION

1. General. a. This catalog is an alphabetical listing of all items comprising fire control organizational maintenance purging kit.

b. This set is authorized by tables of allowances and/or tables of organization and equipment.

c. This catalog is intended as a requisitioning and reference document for use by using troops, depots, and supply organizations.

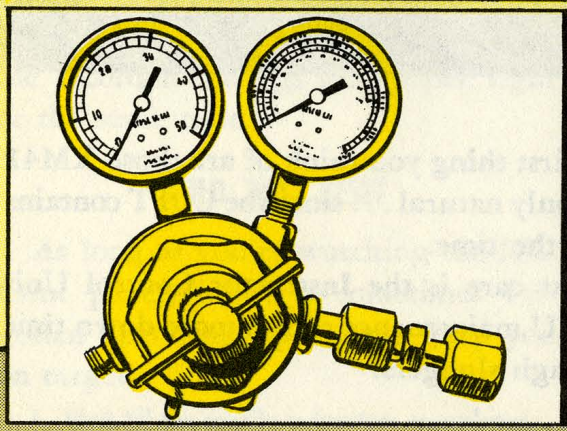
d. For orders of Ordnance-type IIA supply manuals and supply catalogs, see DA Pamphlets 310-4 and 310-6.

2. Responsibility. The U.S. Army Weapons Command is assigned logistic responsibilities in accordance with AR 701-series; and has been designated the Army Class Supervisor to prepare and maintain this catalog.

3. Identification. This catalog is identified by a five-part symbol. The first segment, SC, denotes that it is a supply catalog. The second segment, 4931, identifies the Federal Supply Classification (FSC). The third segment, 95 (Weapons), representing functional area of responsibility, is the compiler. The fourth segment, CL, denotes the arts, kits, and outfits components list (type catalog). The last three symbols, J54, distinguishes the set from others in the same FSC.

4. Explanation of Columns. a. *Action Code.* Symbols shown in the action code column indicate the type of action taken in the publication. Code and definition are as follows:

C (Change)	Indicates a change in data other than the FSN from the previous publication.
D (Deletion)	Indicates that a FSN has been deleted and not replaced.
M (New)	Indicates a FSN not previously included in the base publication or changes.
R (Replacement)	Indicates that a FSN has been deleted and replaced or changed.



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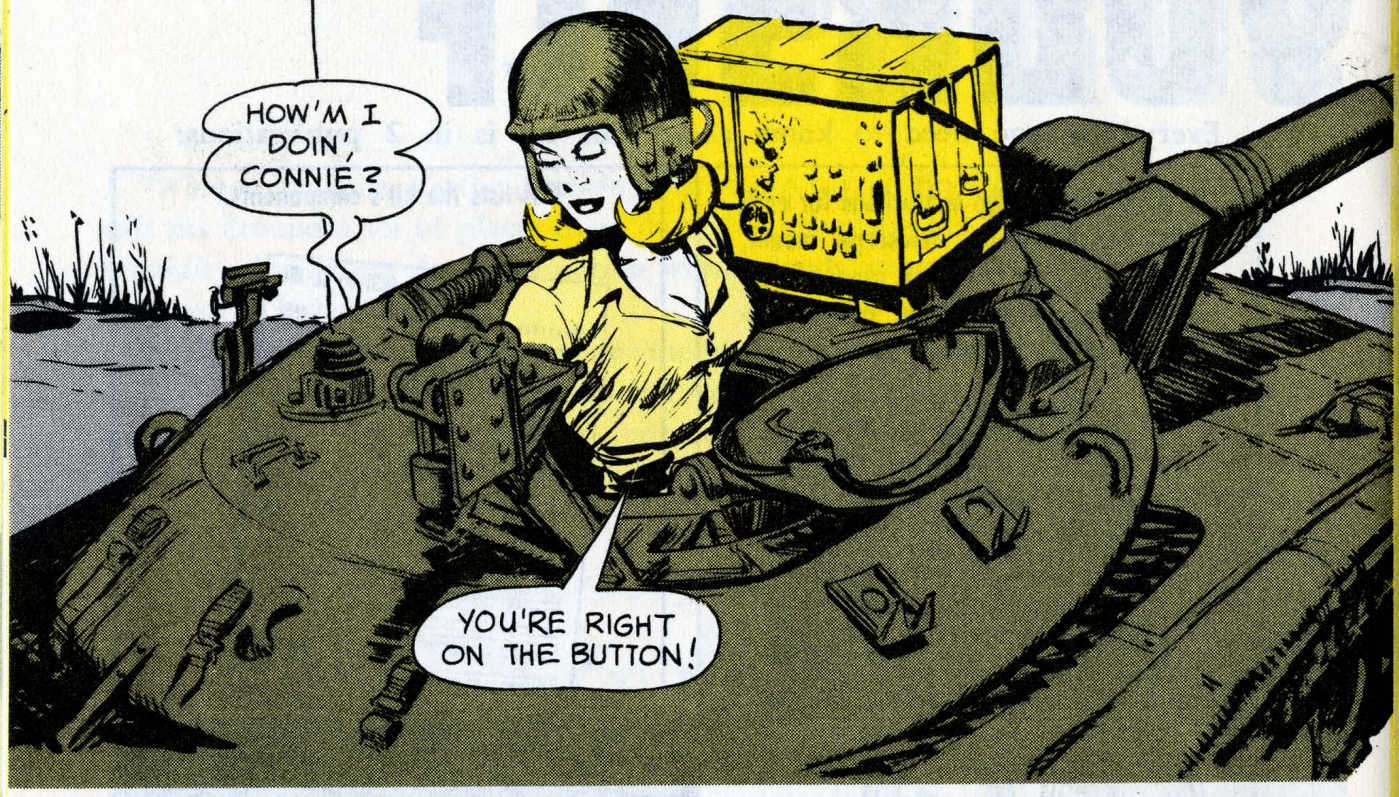
SHILLELAGH SHOOTERS!... CARE FOR

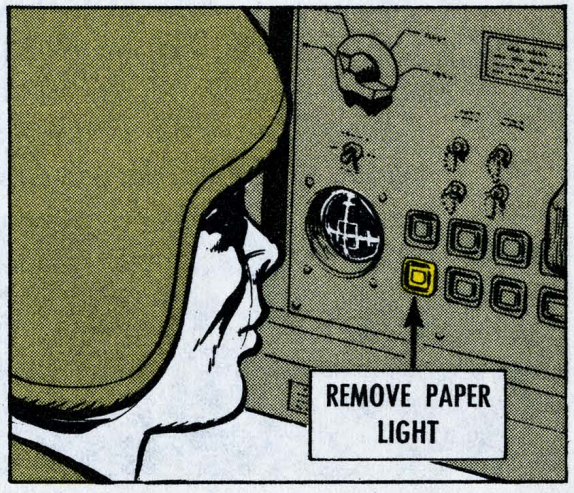


Let somebody mention Shillelagh and first thing you think of are those XM41 and XM43 Conduct of Fire Trainers. It's only natural . . . since the COFT contains the components you work with most of the time.

And the component requiring the most care is the Instructor Control Unit mounted on your tank's turret. So poor ICU maintenance means more down time —and less training—for all you Shillelagh sluggers.

WATCH THE PAPER LAMP

For instance, a sure way to cut training short is to ignore the REMOVE PAPER indicator on the ICU front panel. Since this lamp will only light during the firing cycle, every gunnery instructor needs a third eye cocked to catch the light before it disappears.



If you don't unload the take-up reel when the light says so, the reel jams—but the motor drives on and on . . . until the power's turned off. Leads to all kinds of possibilities: burned out motor,

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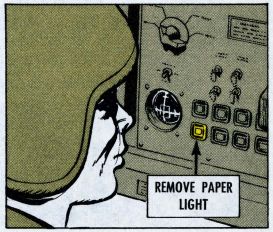


But once your support maintenance applies the change in para 6 of TB 750-926-3 (1 Jul 69), it'll be possible for the REMOVE PAPER lamp to light any time the power is on; not just when the recorder is operating during a firing cycle. Then you won't have to watch the recorder tracings and paper light at the same time.

HOLD THAT RESET

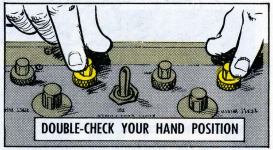
As long as you're watching the ICU front panel, here's a sometimes forgotten operating tip to help keep you on target.

1. **Wait till the missile subsystem completes its recycling before you hit that RESET light button.**
2. **Hold that button in until the MISS DISTANCE cross-pointers come to a complete stop.**

Table 2-13, page 2-19 of TM 9-6920-465-12 (Sep 69) has it in writing.

You also want to be very careful each time you put a new roll of paper in the recorder. Reaching blindly around the ICU's open cover can sometimes be embarrassing . . . particularly when you discover you grabbed the wrong set of knobs for adjusting the stylus positioners.

It's smart to double-check your hand positions before actually turning any knobs — since all 4 of them look and feel alike. Just one wrong turn can throw either of the gain potentiometers out of adjustment. And then the recorder unit has to go back to maintenance support to reset them.

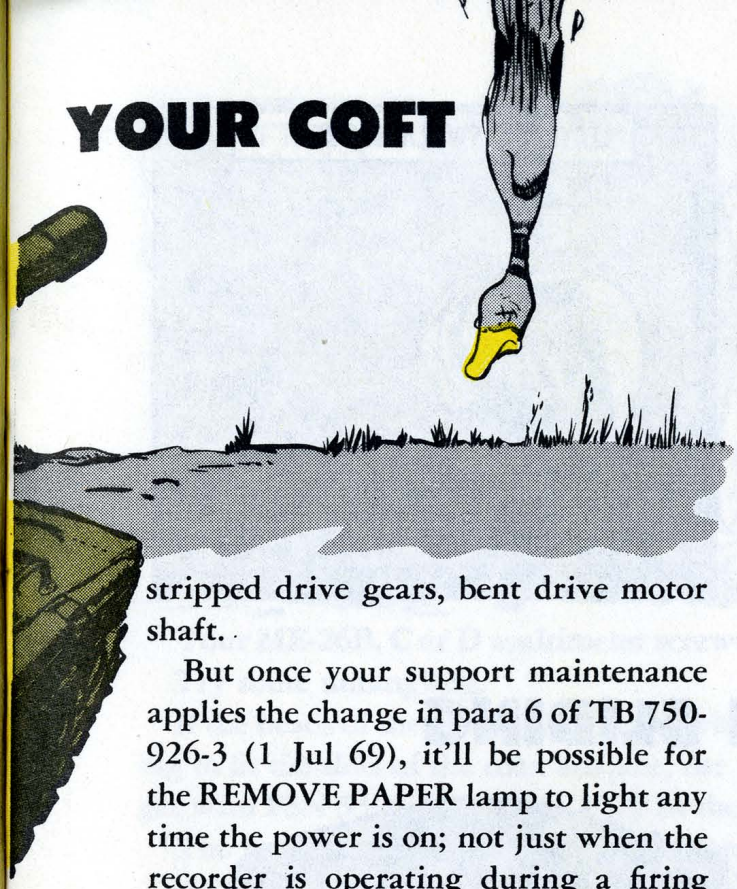


The fix in para 7 of TB 750-926-3 (1 Jul 69) replaces the "knurled" locknut on the gain pots with a bushing and "hexhead" locknut (FSN 5355-535-3590) that gives the 2 pot controls a different "feel."

COUNTER-CLOCKWISE? CORRECT!

Wait one while you've got the ICU open. In case you didn't realize, that

PS MORE



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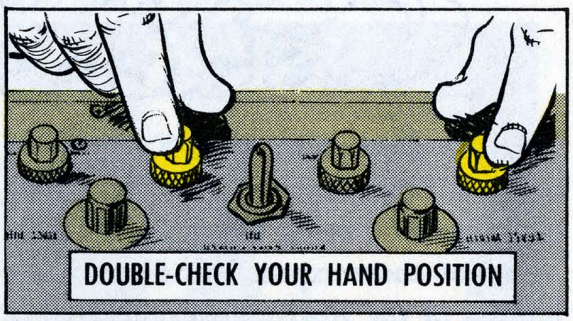

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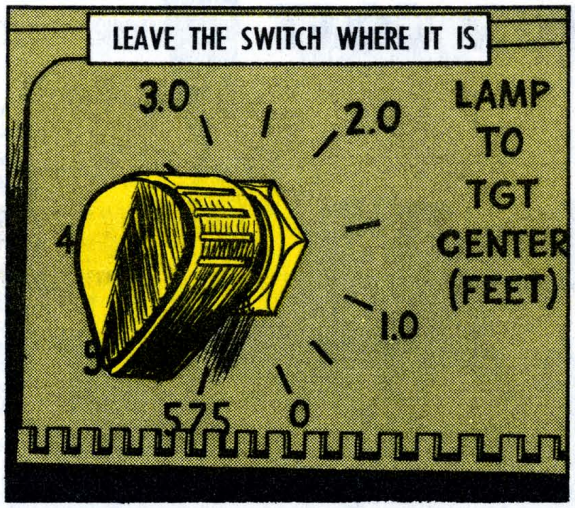
P.S MORE

Lamp-to-Target-Center adjustment control knob, next to the recorder housing, is set by organizational maintenance. So leave it in the extreme counterclockwise position—unless you plan to use it for a target vehicle other than the M551 Sheridan or M60A1E2 tanks.

Be sure the ICU cover is closed during a COFT self test. Otherwise, the sun, or any other bright light, may hit the cards inside the ICU. And this will cause a "no-go" on the COFT.



SHILLELAGH'S COFT NEEDS...

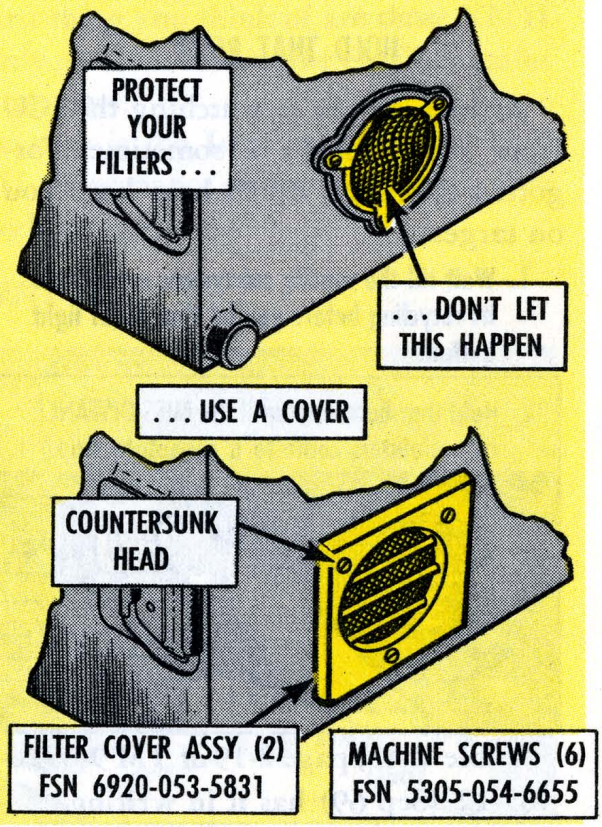
SMOOTH SLIDING

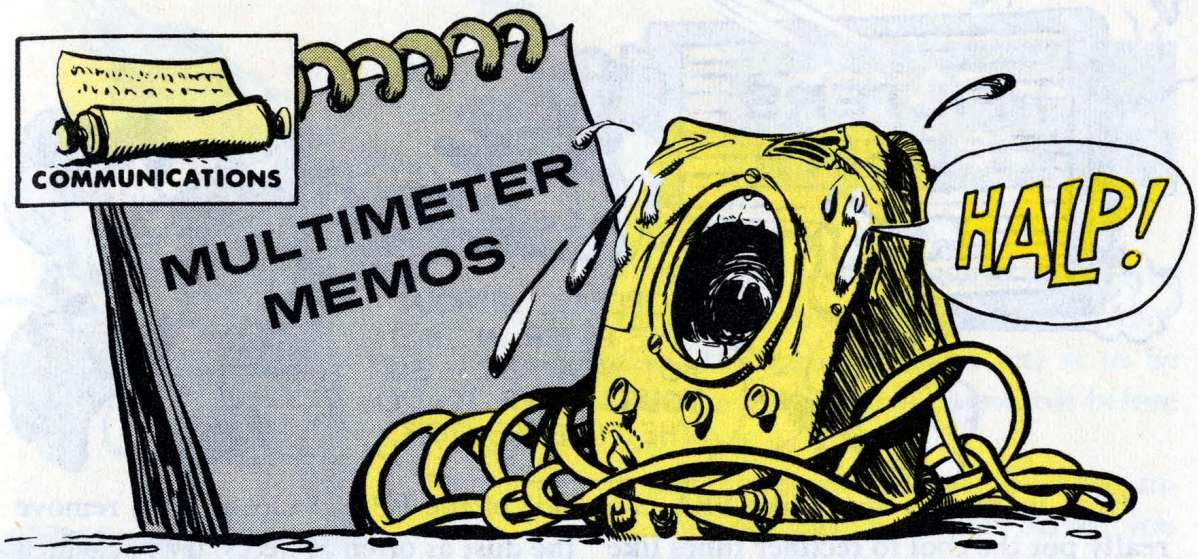
Loading the XM41 or XM43 Conduct of Fire Trainer onto your Shillelagh missile firing tank can be pretty rough on those exposed air filters at the bottom of the Instructor Control Unit.

That tank's hide is just too tough for the unprotected filters to slide by without knocking the heads off the retaining clip screws or gouging into the filters themselves.

But a cover like the one used with the inlet air filters on the Power Control Unit of the XM42 target assembly is perfect protection.

All you need are 2 each filter cover assemblies . . . FSN 6920-253-5831 (11603781) . . . and 6 each machine screws . . . FSN 5305-765-4352 (MS-51959-31) . . . to fasten down the covers.





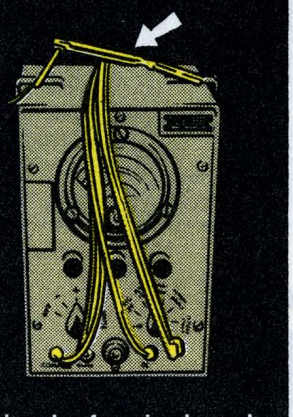
Your ME-26B, C or D multimeter screwed up and tied in knots?

Try some untangling.

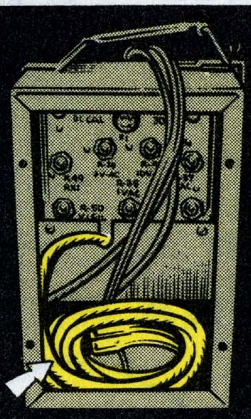
If the heads of the mounting screws (which hold the plug to the barrel) are too big to fit the slots of the coax adapter, use MS35275-212 type screws, which you get with FSN 5305-945-0505. They fit the adapter slots no sweat.

The screw problem, incidentally, comes up with the ME-26D.

As for the knotty spaghetti in storing B, C and D models, try this:

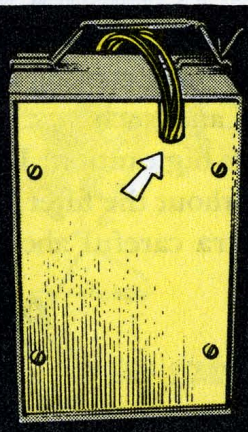


Slip the four leads under the handle on top of the ME-26.

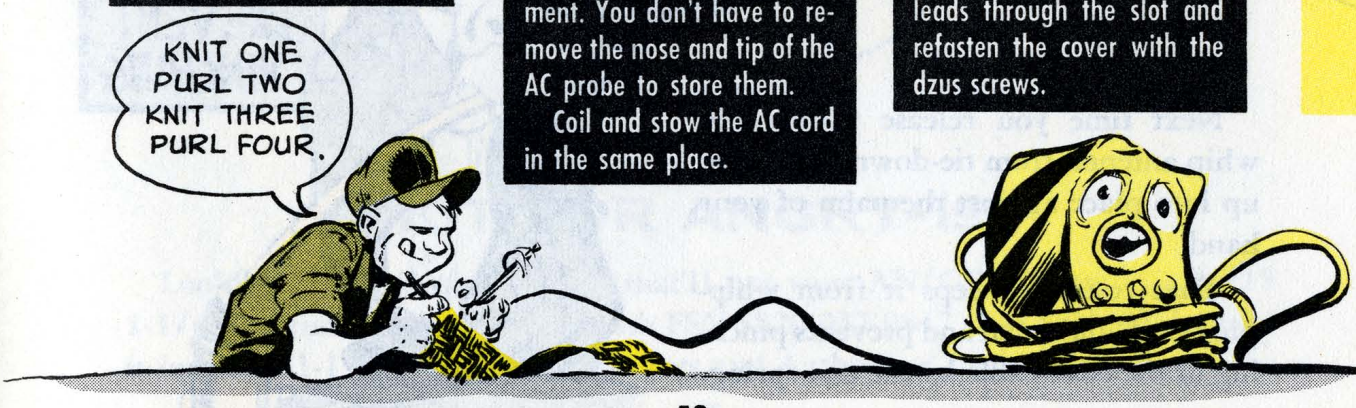


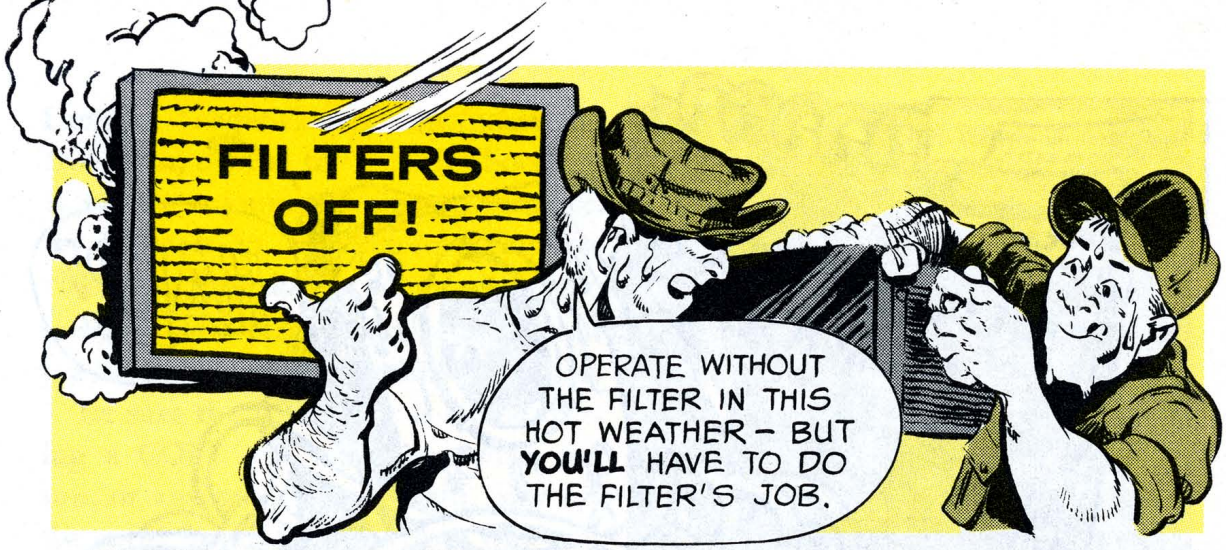
With probes and clip attached, coil the leads and stow them in the compartment. You don't have to remove the nose and tip of the AC probe to store them.

Coil and stow the AC cord in the same place.



Turn the back cover upside down, so's the AC cord slot is at the top. Fit the leads through the slot and refasten the cover with the dzus screws.



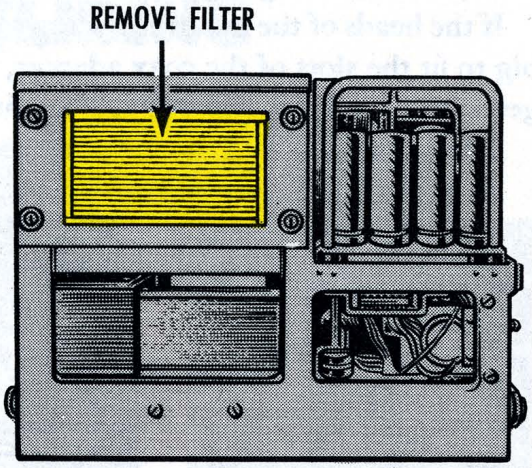


Heat in garden spots like SEA can really put the cool to rectifier tubes like the V1 and V2 type 836's in the PP-685/TRC power supply.

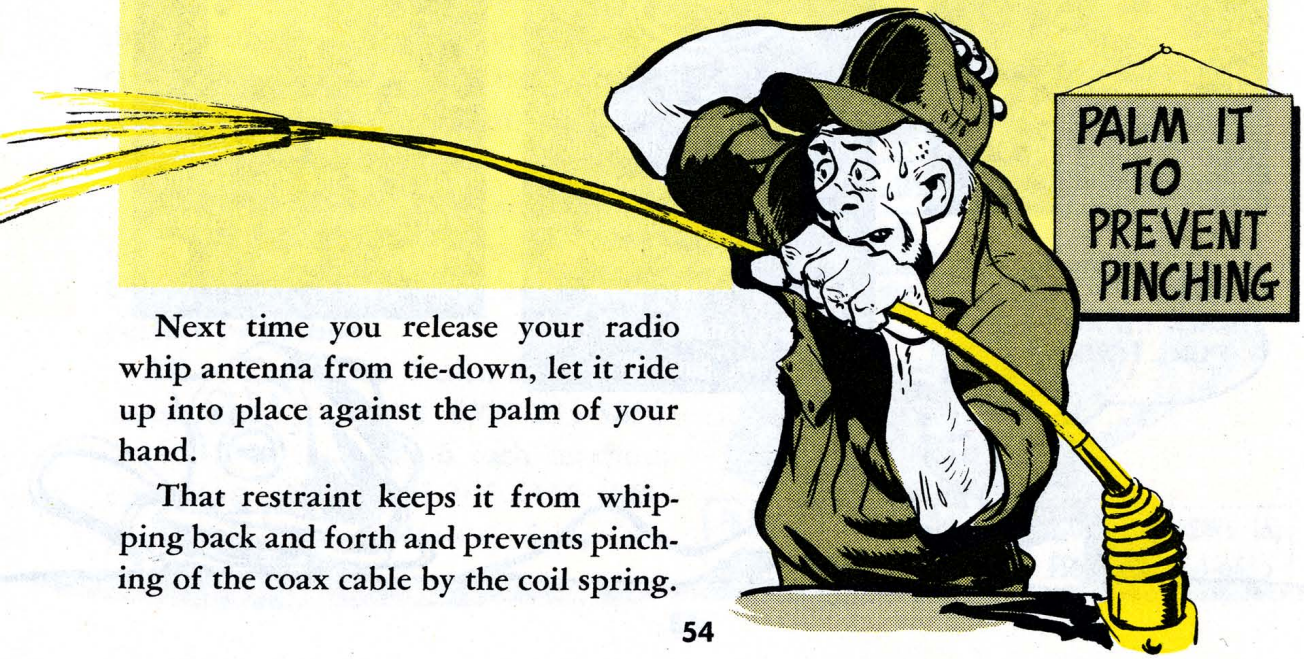
So, to keep the tubes from failing and putting your AN/TRC-24 radio set out of business, remove the air filter from the back of the PP-685.

Fact is, removing the filter is a must in hot and humid areas. Taking it out allows more cooling air to flow over the tubes and such.

One big caution: Dirt and dust build up without the filter, so operators gotta be extra careful about keeping the inside of the PP-685 clean. Like, remove the dust as often as necessary . . . which may be often in hot, dusty, humid areas.



ANTENNA RELEASE



Next time you release your radio whip antenna from tie-down, let it ride up into place against the palm of your hand.

That restraint keeps it from whipping back and forth and prevents pinching of the coax cable by the coil spring.

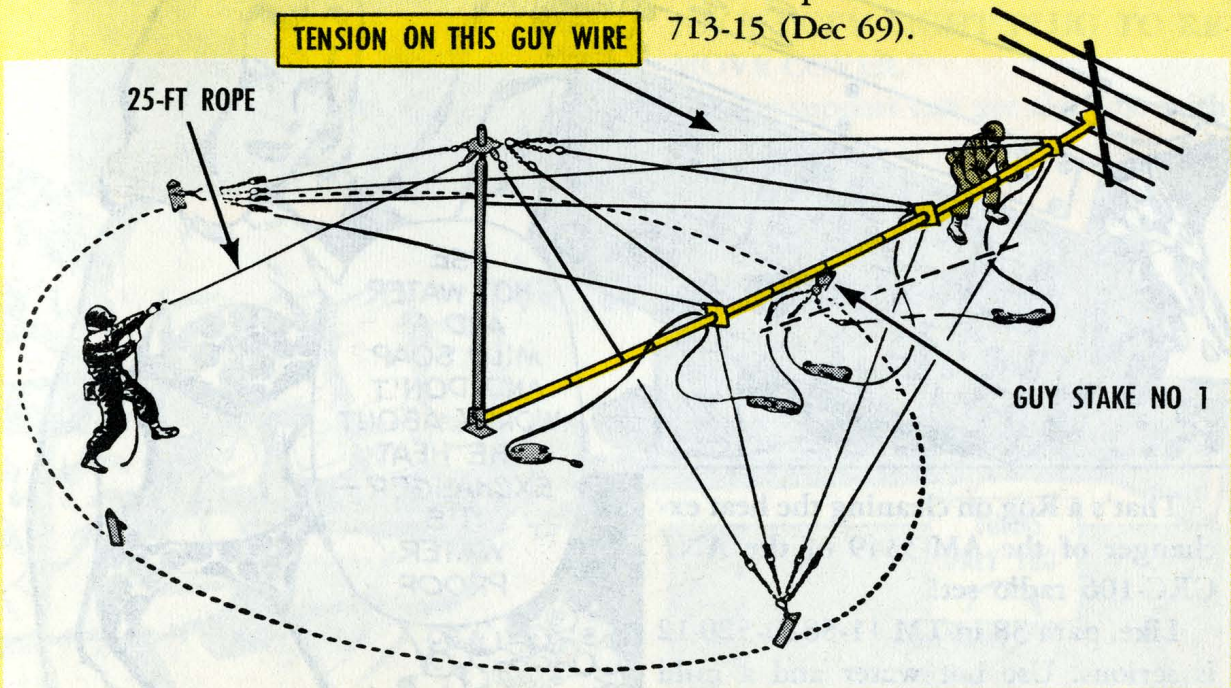
BOW THAT MAST

One sure way to prevent damage to the mast of the AS-2169 antenna (AN/GRC-163 radio terminal set) is to be sure the mast is bowed upwards before you erect it.

Like, after you've assembled the antenna and mast, and just before you pull it upright, add enough tension to the top mast guy wire on the gin pole so that it bows the mast slightly upward.

Save bent mast sections.

It also pays to follow each step outlined in para 2-15d of TM 11-5820-713-15 (Dec 69).



KIT FOR ANGRY-19

Looking for an installation kit that'll put your AN/GRC-19 set in a M715 1-1/4 ton truck? You can get it with FSN 5820-937-9847. The FSN didn't make it into SB 11-131, Vehicular Radio Sets and Authorized Installations.

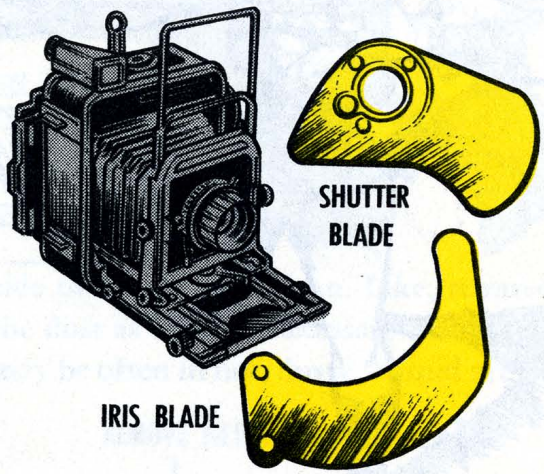
CAMERA FLASHES

Now hold up, you organization camera repair types. There's not much point in diggin' into the innards of that Graflex KE-12 (2) still-picture camera without the proper test equipment.

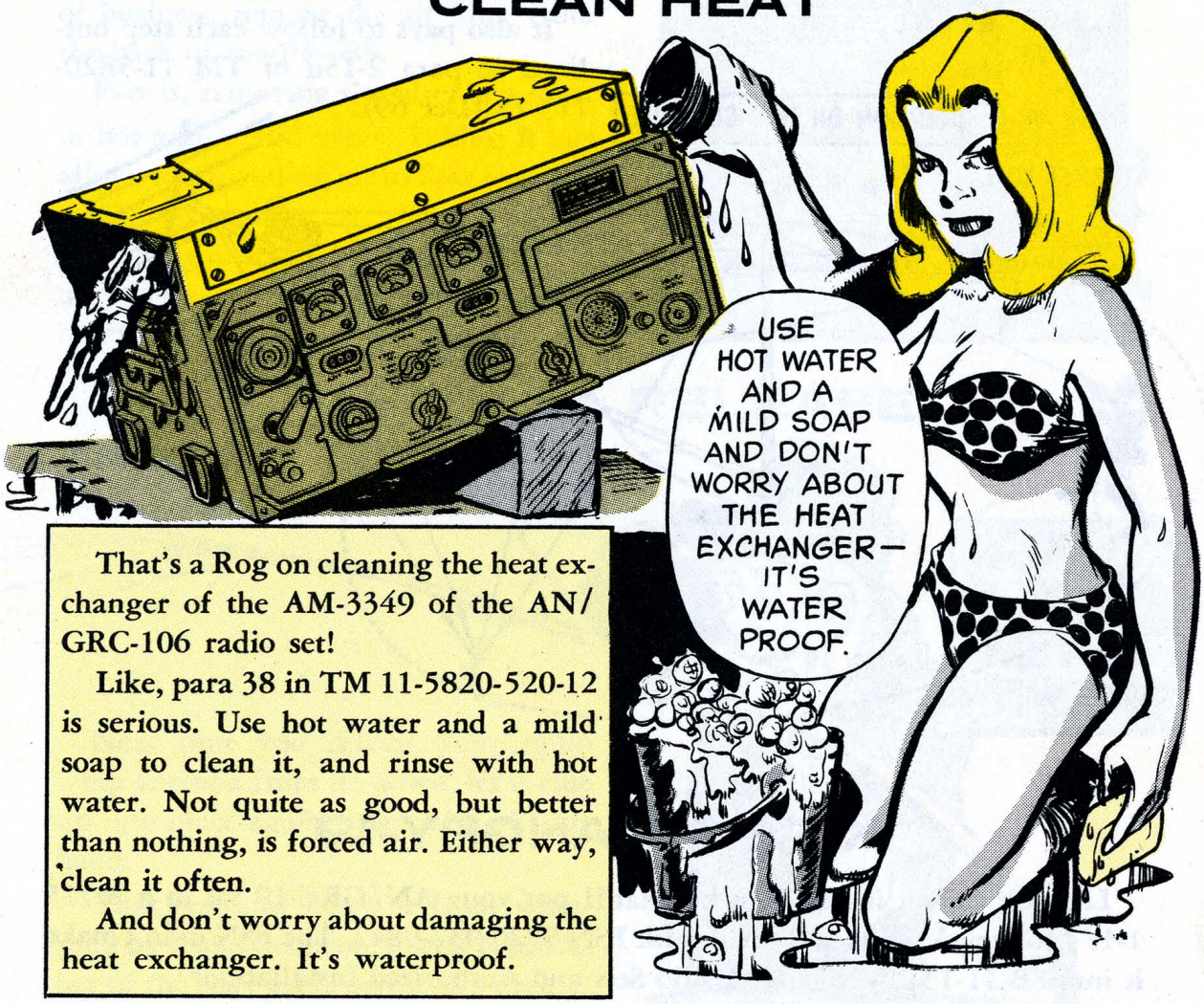
If the ailment's in the electrical circuitry, the KE-12 (2) should be routed to support for fixin'.

You'd be mighty smart not to touch the shutter and iris blades under any circumstances. Acid from human fingers can corrode the blades and louse 'em up.

Incidentally, you need to use BA-202 batteries in flashguns, not the BA-30's.



CLEAN HEAT

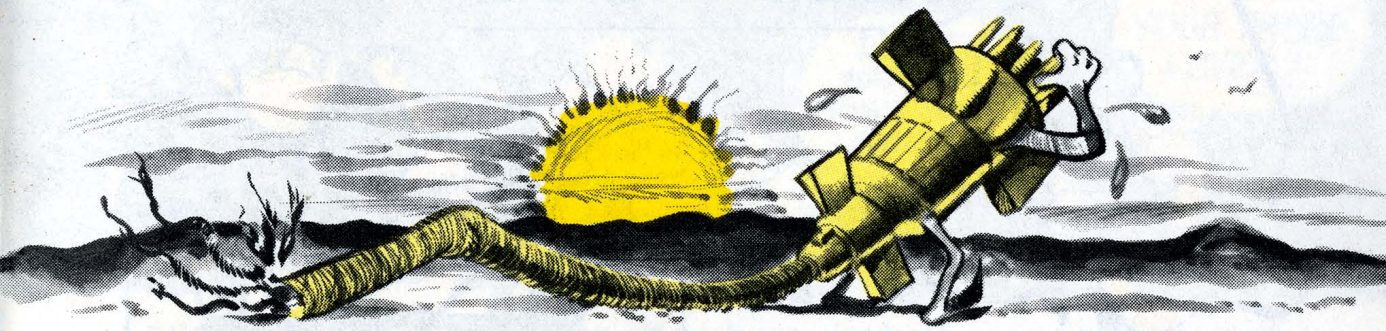


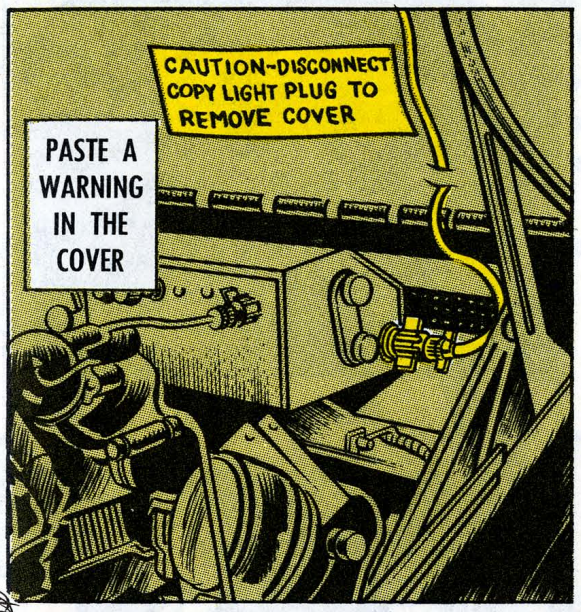
That's a Rog on cleaning the heat exchanger of the AM-3349 of the AN/GRC-106 radio set!

Like, para 38 in TM 11-5820-520-12 is serious. Use hot water and a mild soap to clean it, and rinse with hot water. Not quite as good, but better than nothing, is forced air. Either way, clean it often.

And don't worry about damaging the heat exchanger. It's waterproof.

PULL THE PLUG





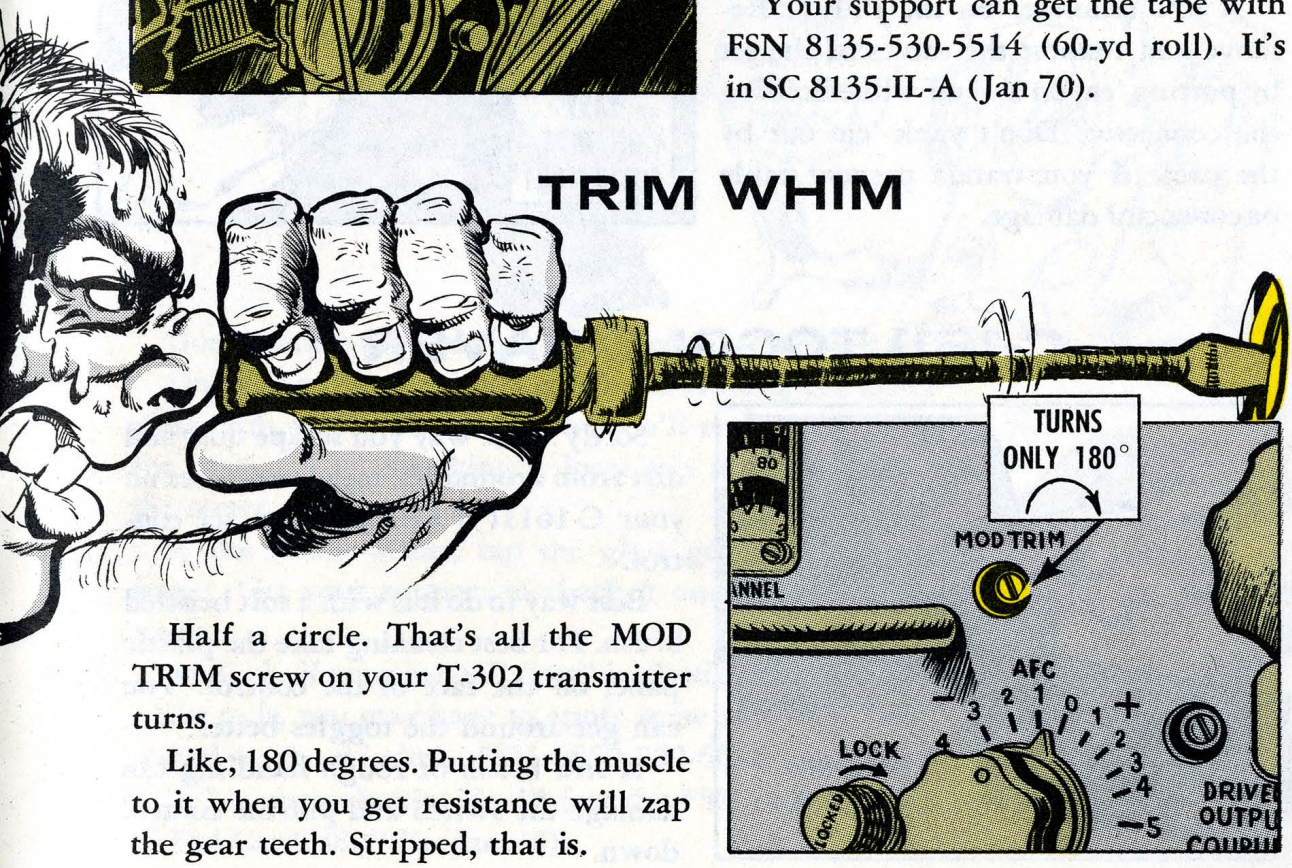
The dust cover of your TT-76/GGC teletypewriter can dust off the copy light plug (P12), jack (J12) and cable quick-like if you forget to pull the plug before removing the cover.

So pull it.

For a permanent reminder, latch on to some 1-in wide pressure sensitive tape and paste it on the cover top with this word: "CAUTION—DISCONNECT COPY LIGHT PLUG TO REMOVE COVER."

Your support can get the tape with FSN 8135-530-5514 (60-yd roll). It's in SC 8135-IL-A (Jan 70).

TRIM WHIM



Half a circle. That's all the MOD TRIM screw on your T-302 transmitter turns.

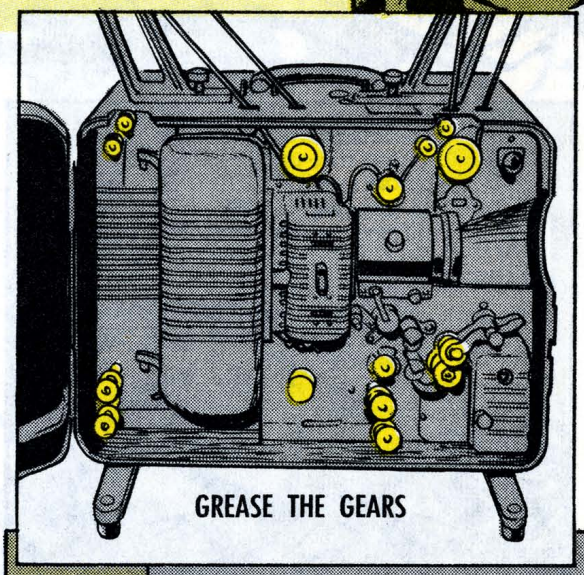
Like, 180 degrees. Putting the muscle to it when you get resistance will zap the gear teeth. Stripped, that is.

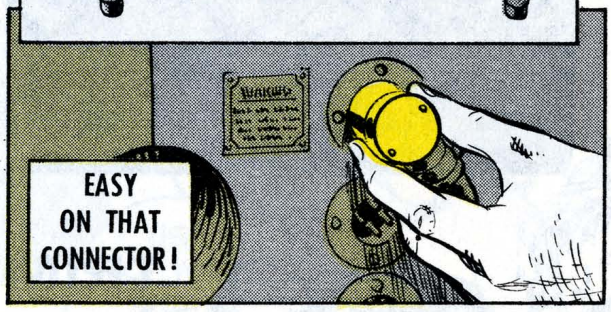
Oil is beautiful in its place, but that place is not the gears and bearings of the AN/PFP-1 projector set.

Gears and bearings of the PFP-1 get either GAA or GL grease, like the TM says. Lubing 'em with oil can burn out the gears and whatall.

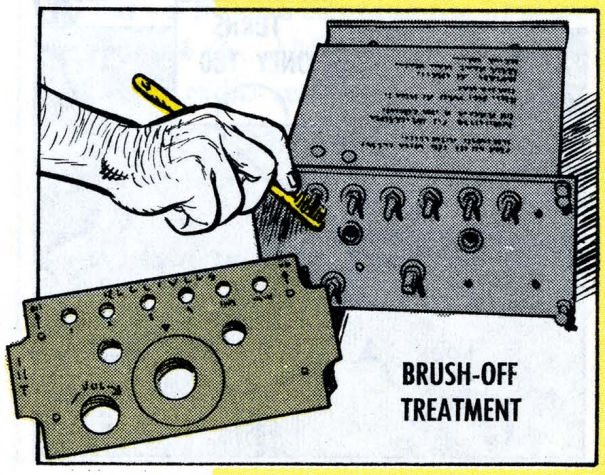
You use oil on the points spelled out in Fig 29, page 56, of TM 11-6730-208-10. Switch to grease for other points.

A PM reminder on the PFP-1: Remove and connect the cables of the set by putting 'em on and off while holding the connector. Don't yank 'em out by the cable if you wanna prevent cable or connector damage.





C-1611 TOGGLE SAVER

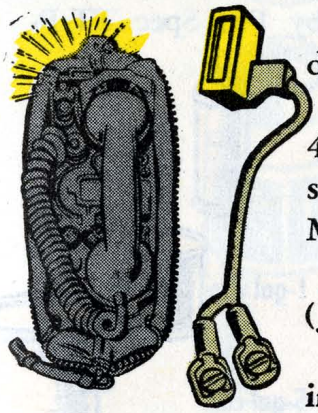


Softly is the way you scrape dust and dirt from around the toggle switches on your C-1611( )/AIC intercom set control.

Best way to do it is with a soft bristled brush. For best cleaning take the plastic panel off the face of the control. You can get around the toggles better.

A stiff brush or rough handling can damage the switch and put the control down.

UPTIGHT SIGNAL LIGHT



It takes an off-hook security lamp to watchdog the accidental transmission of sensitive info over your telephone set.

You can requisition the lamp for the TA-312/PT or TA-43/PT telephone set by using FSN 5805-782-9210. This stock number replaces FSN 5805-789-3843 in the Army Master Data File.

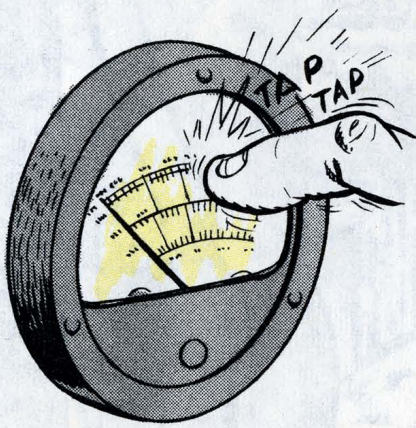
You'll also find it listed on Page 87 of Ch 5 to SC 5805-IL (Jul 67).

This'll give you the entire assembly you need for the installation.

FINGER TAP ONLY

Got a stuck needle on your multimeter or other test set?

One thing that won't get it loose is tapping the meter glass with a tool! More'n likely, you'll end up breaking the glass . . . or knocking it loose so's it'll fall against the meter.



If the needle sticks, tap the glass gently with your finger. Get your support to check it out if that doesn't work.

And, uh, if your meter "glass" is plastic and the needle sticks to it, you may have to apply some anti-static compound to the window. FSN 6850-882-6690 gets you a 3 1/2-oz spray bottle. You'll find the FSN on page 3.56 of Fed Cat C6800-IL (Jan 70).

COMBAT SUPPORT

M11 DECON PAINTERS

Your M11 decons need painting? Here's the paint scoop you need.

If you need a primer you can use coatings covered by Fed Spec TT-P-664, like:

FSN 8010-936-8372 — 1-pt pressurized can

FSN 8010-292-1127 — 1-gal can

FSN 8010-161-7275 — 5-gal can

For the lusterless, olive drab top coat you can use paint covered by Fed Spec TT-E-527 or Mil-E-5556, color No. X34087, such as:

FSN 8010-069-1266 — 1-qt can

FSN 8010-297-0560 — 1-gal can

FSN 8010-297-0561 — 5-gal can

The paint's listed in Fed Cat C8000-IL-A (Oct 69).

To freshen up the yellow fill line and the fill note you need marking stencil ink (Fed Spec TT-I-558):

FSN 7510-224-6733 — 1-pt can

See page 3.13, Fed Cat C7510/30-IL-A (Mar 69) for the ink.

COMBAT SUPPORT

M11 DECON PAINTERS

PAINT SHED

MASK THE DATA PLATES BEFORE YOU PAINT 'EM.

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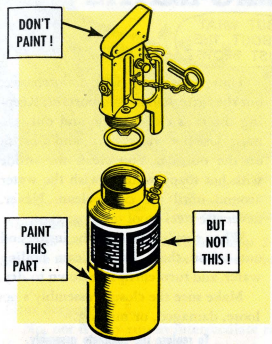


If it's more'n just a spot-painting job, it's best to do the painting when a decon's empty. Never paint the spray head assembly. You can paint the bracket and the complete exterior of the container, including the drain plug head. Be sure to mask the decon's instruction plate.

Remember, the plate's no longer authorized as a replacement part. When it's lost or damaged the M11 has to be tagged unserviceable. So guard the plate.

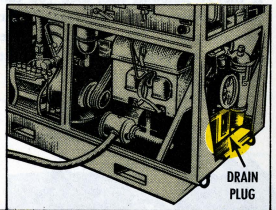
WORK SAVER —

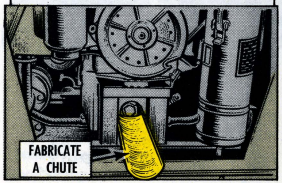
DECON OIL DRAIN

On the M12A1 skid-mounted decon, you need a chute of some kind to drain the engine's crankcase oil. Otherwise, the oil will splash smack on to the decon's metal deck and you'll have a messy flood to mop up.

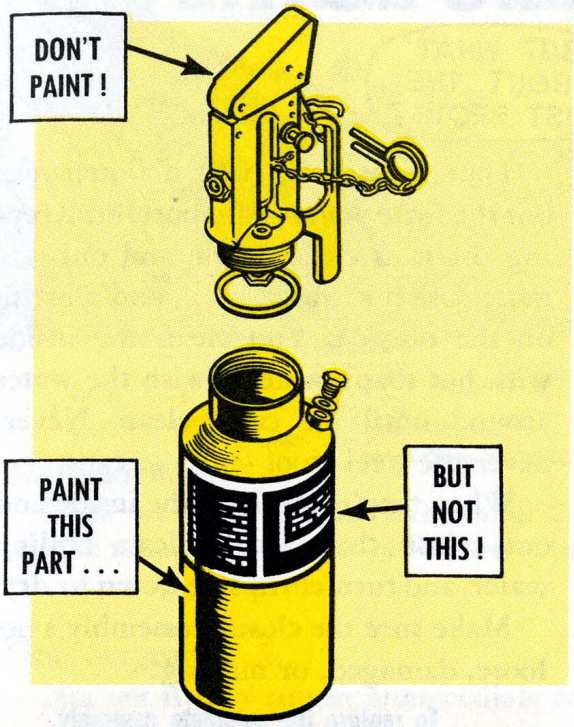
You can make the chute from a strip of thin aluminum, or any thin metal, or even from an old tin can or from sturdy cardboard. The strip should be at least 3 1/2 inches wide and 12 3/4 inches long. Curve the strip lengthwise so you'll have a smooth chute about 1 1/8 inch deep.

Place one end of the chute under the engine's front oil drain plug and drain away. The chute'll carry the oil well away from the deck and you can catch it in a shallow container.





PAINTING CARE



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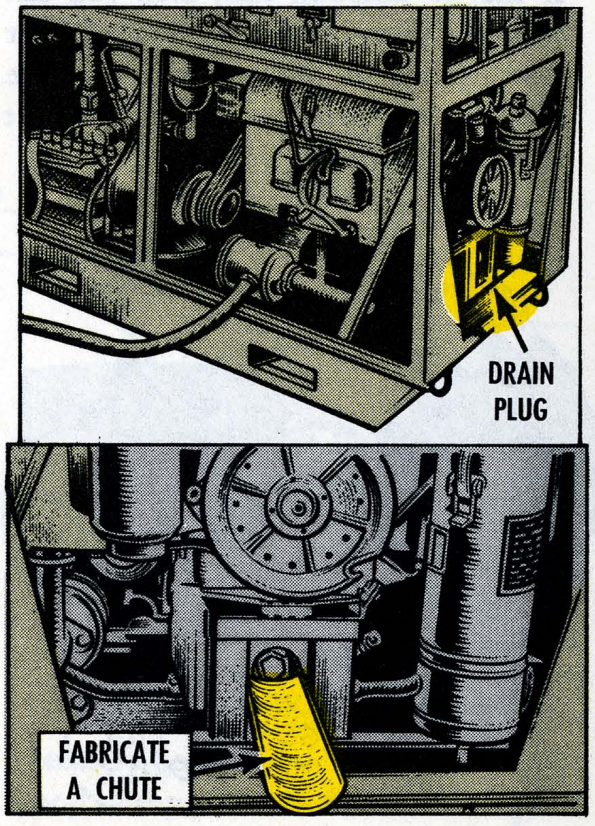


STILL A NO-NO

Paint's used for many purposes — it protects your equipment, it'll camouflage your equipment, and sometimes it's used to improve looks (take your gal, for instance, she knows how to use it to improve her looks). But paint's still a no-no for the inside of the 5-gal water can.

So what do you do when you find scratches or rust spots on the inside of your water can?

It depends upon the size of the spots. If they're pinpoint size, then you can still use the can. If they're bigger, better turn the can in. When you're not sure whether to turn 'em in or not, get advice from your unit surgeon.

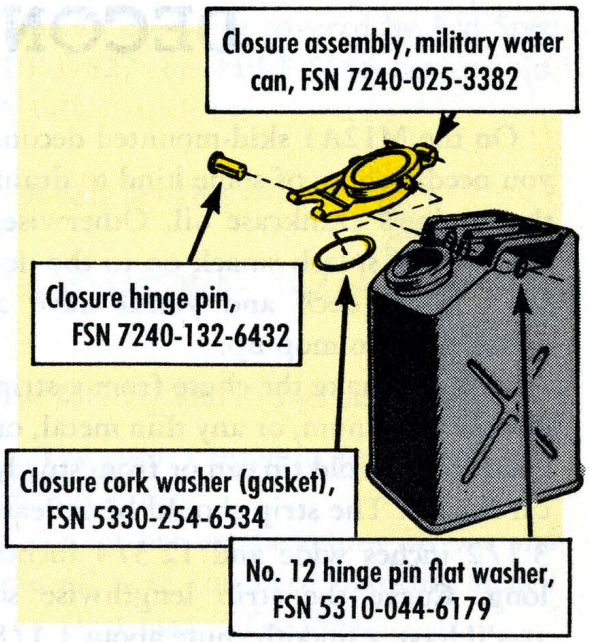
PM HELPS

Those cans need little maintenance, but the little you do is important. Keeping the cans clean inside and out is a must. Use hot water, soap, and a brush on the outside. You clean the inside with hot soapy water. Swish the water around until the can's clean. Never, never use steel wool on those cans.

When they're clean on the inside and out, rinse them with clean boiling water, and turn 'em upside down to dry.

Make sure the closure assembly's not loose, damaged, or missing.

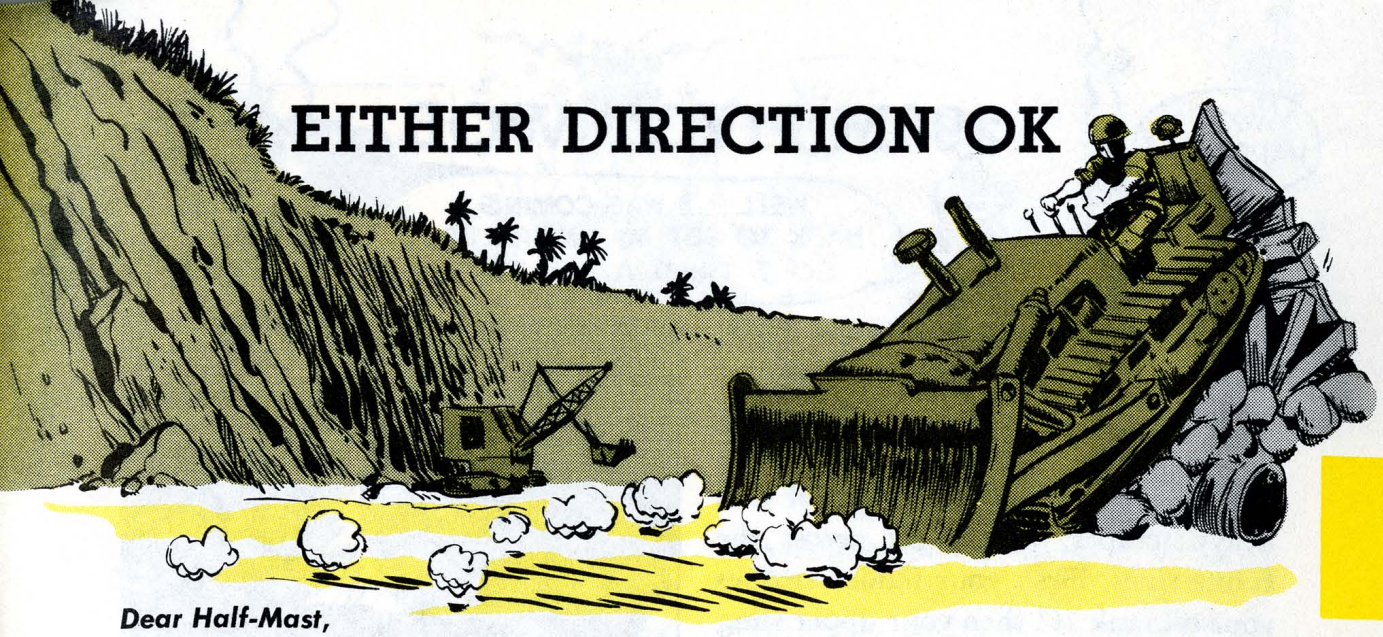
To replace the complete assembly, or some of the parts, ask for:



You use a non-toxic adhesive to glue a loose or new gasket to the closure assembly. FSN 8040-273-8717 will get you a pint.

The outside of the can may be painted with OD enamel, FSN 8010-297-2124.

EITHER DIRECTION OK



Dear Half-Mast,

Often we have to cross base camp 2 or 3 miles with a D7E. Most drivers go in reverse to keep track dust out of their eyes. Will this hurt the equipment?

SGT C. E.

Dear Sergeant C. E.,

No, not if they run in intermediate range to prevent track damage. Reverse or forward makes no difference, but always travel in intermediate range . . . and easy on the throttle. Go piggyback on a trailer if there're many miles to travel.

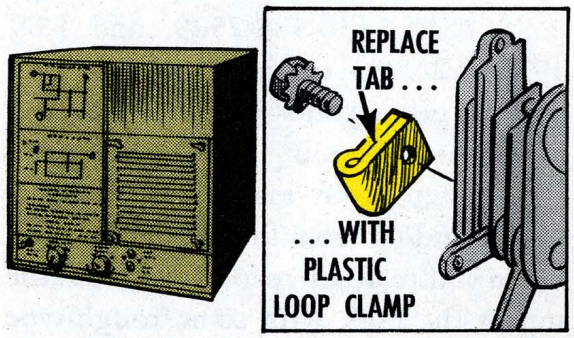
Half-Mast

KEEP TAB

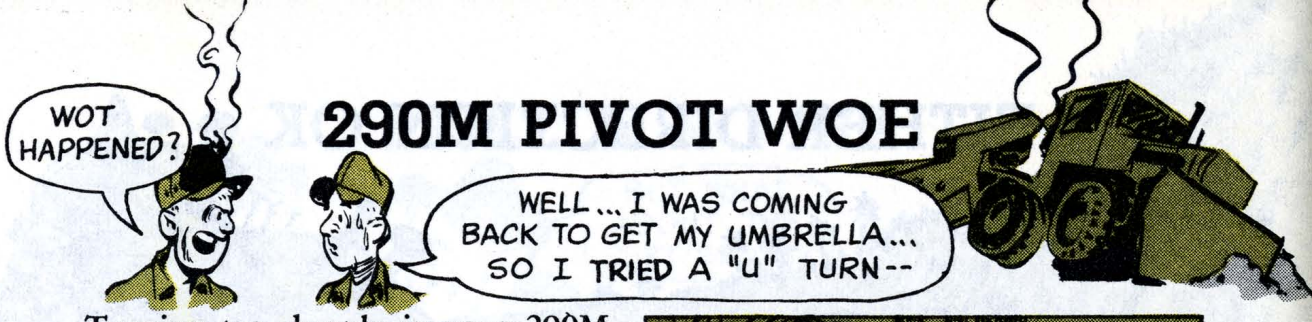
You can be as snug as a bug in a rug if you do your preventive maintenance on your Hupp Model MH15B3C1, 15,000-BTU space heater.

But you could be left out in the cold if you forget to take a look at the tab in the room thermostat control. Some of those tabs are being cut by an external lockwasher. This'll cause the input voltage to be grounded, and it'll blow the fuse.

To keep your heater in operating condition, examine that tab (which is made out of .010-in thick fiber electrical insulating paper) for cuts or wear. If it needs to be replaced, use a plastic type loop clamp, FSN 5340-619-0188.



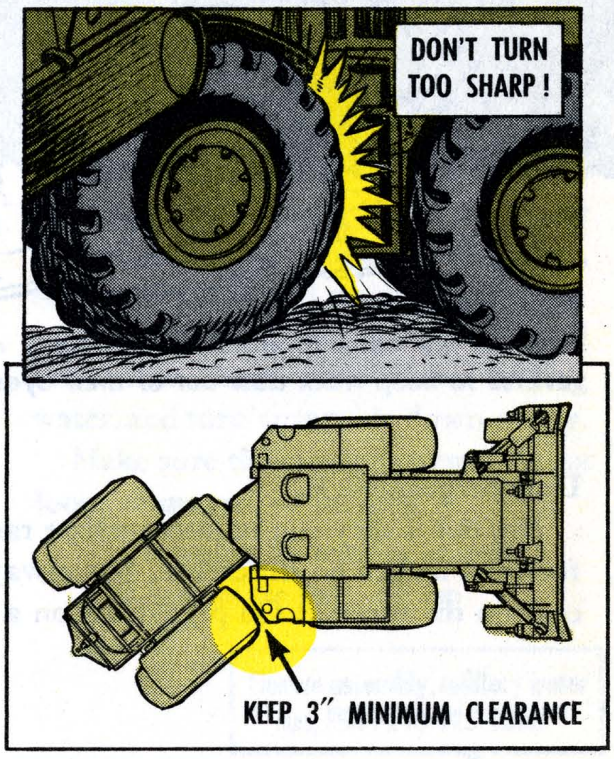
290M PIVOT WOE



Turning too sharply in your 290M tractor can crack your rear frame. That's disaster, but it needn't happen.

The trouble is, the strain of the whole rear assembly, plus the weight of that heavy scraper, jolts right across the frame sides. First, your fender crushes your oil tank . . . then your upper sling point gouges a hole in the wall . . . then your frame bumpers hit and the shock rips that side plate. The bill could run over $20,000.

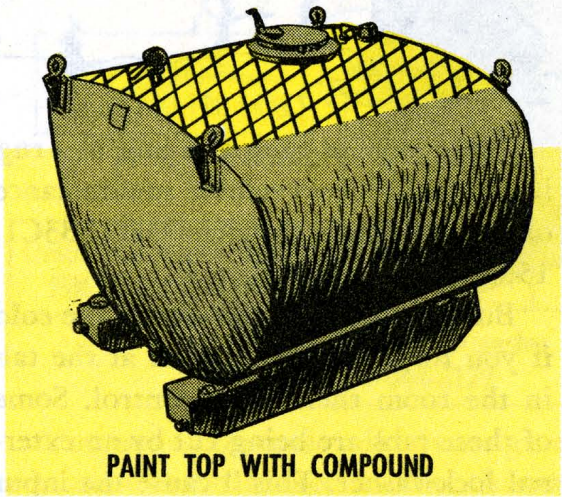
The trick is, never turn so tight you couldn't drop a baseball between the nearest parts of those front and rear sections—specifically, keep at least 3 inches between that fender edge and your tank wall always.



SKIDPROOF YOUR STORAGE TANK

You don't have to be in cold country to find that your equipment can be slippery when you're climbing around on it. Your 600-gal metal liquid storage tank, FSN 5430-585-2529, and FSN 4930-752-9983, can get as slippery as a greased pig if you spill fuel on the top of it or if it's raining.

To keep from making an unscheduled landing from the top of that tank when you're up there filling it, paint the top of the tank with some rough-type non slip walkway compound. FSN 5610-141-7838 will get you a gallon can of OD, MIL-W-5044, type 2, compound.



You can use a brush to paint an area 50 inches by 48 inches from center to center of the lifting eyes on the top of the tank.

TAMMS Pam

Get the new DA Pamphlet 750-38 (May 70) on TAMMS. It's just been printed. Order copies you need on DA Form 17 from the Baltimore Publications Center.

RTFL Oil Filter

Best not use any older-style engine oil filters on your 6,000-lb RT Forklift. FSN 2940-580-6283 is required on both MLT6 and MLT6CH models, like the new TM 10-3930-242-20P (Nov 69) says.

Loose Dzus?

Ever check for loose items that can cause FOD after your bird comes to roost from support? Like maybe DS or GS has used a jillion Dzus fasteners during an MWO, and a couple of studs dropped into your bird's gizzard. A PMD check on Dzus security—after any repair job—keeps your bird flight-right.

Fuel Hose Wire

No need to replace the whole hose assembly on your M131A5C fuel service semitrailer if the inside ground wire breaks. Just fix 'er up with a new ground wire, like it says in TB 750-981-4 (Oct 69), Article 39.

Check Now!

Have you got an M54A1C 5-ton cargo truck? The new dropside-type? Did it come under Contract No. DAAE06-68-C-0012? You'd better check the wheel bearings—all 6 wheels. Some slipped by with no grease in the wheel bearings. Dry? Lube em!

Beefed Up Bird Dog

Some O-1G's have been modified to increase the gross weight allowance from 2400 to 2800 pounds. The rest of the G models and 0-1D, E, TO-1E aircraft will also carry a bigger pay load—when you get MWO 55-1510-202-30/7 (30 Mar 70) applied. Schedule it, soonest.

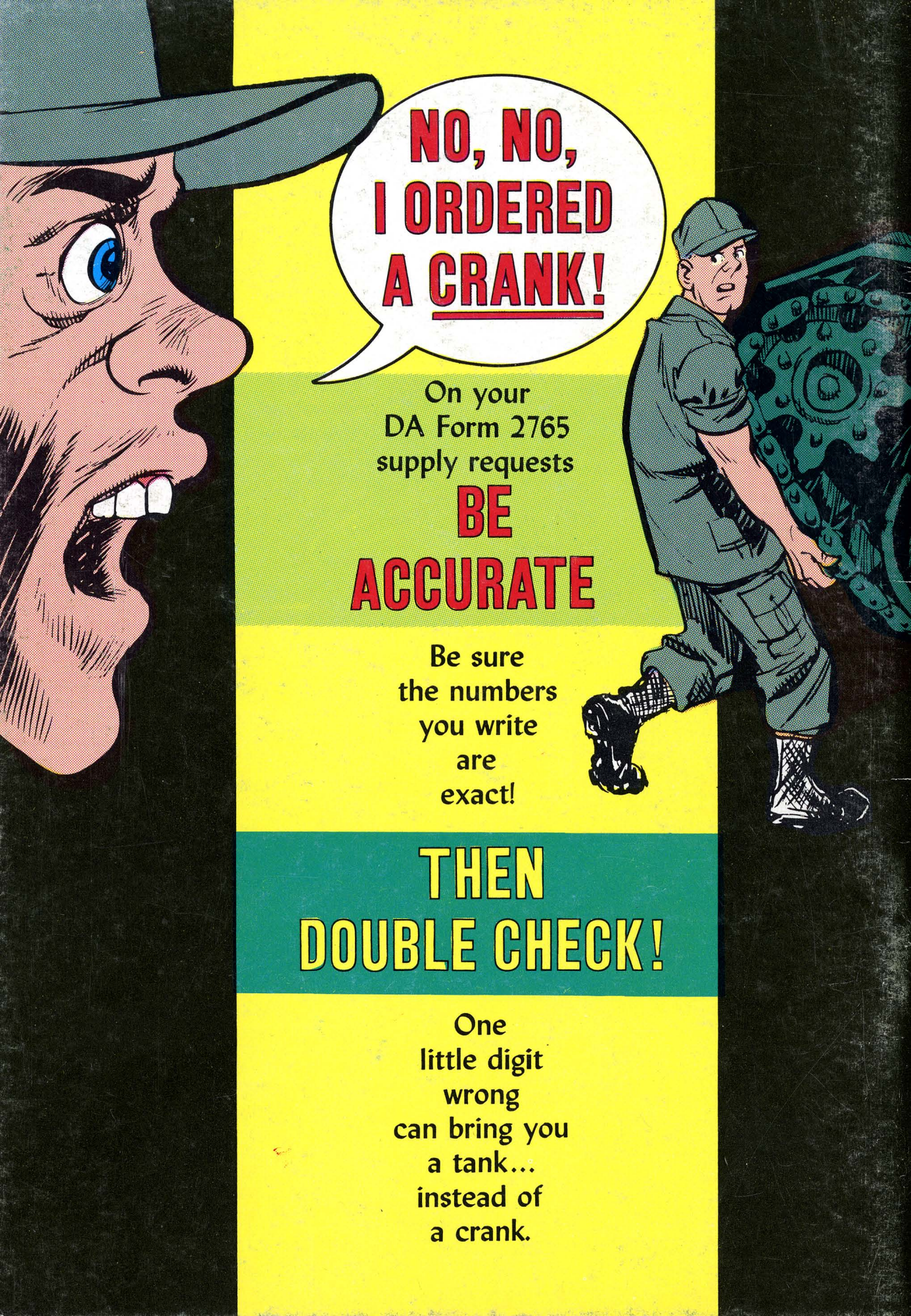
Wrap-up Movies

If you're packing up parts, assemblies or equipment to go back for repair, there are a couple of new movies you oughta see: TF 38-4132 Packaging for Return of Repairables, and TF 38-3892 Packaging for Parcel Post. Get 'em at your local audio-visuals center.

Tachograph Chart

If your 5-ton truck has a tachograph, you use FSN 7640-027-9779 to get a package of 100 replacement charts.

Would You Stake Your Life right now on the Condition of Your Equipment?


NO, NO, I ORDERED A CRANK!
On your DA Form 2765 supply requests
BE ACCURATE
Be sure the numbers you write are exact!
THEN DOUBLE CHECK!
One little digit wrong can bring you a tank... instead of a crank.